Report on the Health Care Safety Net in Missouri

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Executive Summary

Based on the Institute of Medicine (IOM) report and future implications of the endangered health care safety net in the United States, the Agency for Healthcare Research and Quality (AHRQ) and Health Resources and Services Administration (HRSA) initiated a project to monitor the health care safety net. The monitoring process, by developing data-driven capabilities, will help policy makers to derive interventions and strategies for assessing the stability of the safety net.[1]

In order to assess the health care needs of individuals using the safety net and the stability of the safety net, states were provided 118 indicators enabling them to monitor the health care safety net. The Missouri Department of Health and Senior Services (DHSS) undertook the responsibility to monitor the health care safety net in Missouri. This report accomplishes the early stages of the process of monitoring the health care safety net in Missouri by updating the existing indicators and developing new indicators to capture its demand, support, structure, and environment. This report provides the baseline information to help devise an early warning system for the safety net to stay intact. Several research agendas can be developed based on this information.

Demand for Safety Net

The level of uninsurance is one of the determinants of the demand for a health care safety net. Different national and state surveys revealed an uninsurance rate of 8.4% to 11% for all age groups and 12.3% to 13% for the adults aged 18 and older in Missouri.[2] County level uninsurance rates were available only through the state surveys and their comparison to the state level revealed that all the counties in the northeastern and southwestern regions had uninsurance rates greater than the state level.[3]

Other measures of demand for a health care safety net are the percent of individuals below poverty, percent disabled, and the AIDS cases per 100,000 people. In Missouri 12% of the residents lived below poverty in 2000.[4] This rate was highest for the age group 0-17 and lowest for the age group 65 and older. Eight percent of Missourians aged 5-20 were living with some form of disability and 43% percent of the senior citizens in Missouri were disabled. During 2003, 9,413 persons in Missouri were living with HIV or AIDS (rate of 168 per 100,000 Missourians). Based on data for 33 states of the United States, this rate was 212 per 100,000 people.

Support for Safety Net

Based on the 1999-2001 Current Population Survey (CPS), about one half of the state's population, with incomes less than 200% Federal Poverty Level (FPL), was enrolled in Medicaid. Sixty-seven percent growth in the Medicaid enrollment was observed in Missouri between 1998 and 2003. The highest growth was noticed in the southwestern region where it

[1] Safety net is considered to consist of the providers that are currently engaged in taking care of the health care needs of the individuals who cannot afford it.
[2] Current Population Survey (CPS, 2002-03), Behavioral Risk Factor Surveillance System (BRFSS, 1991-2001, 2003), Missouri County Level Study (2003), and Health Insurance Coverage and Access Survey (HICAS, 2004).
[3] This report has used the BRFSS classification of the regions for Missouri.
[4] United State Census (2000).

almost doubled (increase of 96%). According to the data provided by AHRQ, for every person in Missouri below 100% of the federal poverty guideline, about $89 was received as a Disproportionate Share Fund (DSH) payment by Missouri in 2001.

Data suggested that the two metro regions of Missouri had a high density of the vulnerable population (uninsured and Medicaid enrollees). Missouri does not have an uncompensated care pool.

Structure of Safety Net

Inpatient Care

In 1999, 75% of the inpatient care to all Missourians was provided by hospitals owned by not-for-profit organizations in Missouri and about 60% of the inpatient care was provided at non-teaching hospitals.

Concentration and Distribution

AHRQ data suggested that Missouri ranked 9th among 31 states for which the data on safety net was provided, with the market share of uncompensated and Medicaid patient population concentrated in a small number of hospitals. Missouri ranked 24th with a Cost Shifting Index for uncompensated and Medicaid discharges of 0.16, which implied that the area hospitals would have to raise the charges to commercial patients by 16% in order to make up for the revenues lost by providing uncompensated care. Cost Shifting Index is the percent on average that an area hospital must raise charges to commercial patients to make up for the revenue lost through the provision of uncompensated care (percent on average that area hospitals must raise commercial charges to “cost shift” uncompensated care)

The Gini Coefficient for uncompensated and Medicaid discharges for Missouri suggested that 26% of area patients in the state of Missouri would have to change hospitals to equalize uncompensated care and Medicaid discharges across all area hospitals. The Gini Coefficient is the percent of area patients who would have to change hospitals to equalize uncompensated care and Medicaid discharges across all area hospitals. Missouri ranked 23rd in the nation for the percent of uncompensated and Medicaid discharges in high-burden hospitals. In the southern region counties of Jasper, Lawrence, Butler, and Howell all Medicaid and uncompensated care patients went to high burden hospitals (hospitals that would need to raise commercial charges 25% or greater to make up for the lost revenue from uncompensated care).

Ambulatory Care

With the exception of the two metro regions, the rest of the regions in Missouri had outpatient visits per admission higher than the state level of 19%. Two Community Access Program (CAP) grants were awarded to Missouri in 2001 to: Kansas City Care Network Metropolitan Community Health Services ($864,475) and Kirksville College of Osteopathic Medicine ($968,959).

Environment of Safety Net

Health Care Delivery System

Role of Health Maintenance Organizations (HMOs)

The 2003 HMO data suggested that in Missouri, with the exception of the Kansas City Metropolitan Statistical Area (MSA), and Johnson and Gasconade counties, the remaining counties have non-competitive HMO markets. In 2003, about 22% of Missouri's total population was enrolled with HMOs and less than 1% were enrolled with HMOs in 22 counties. These counties were located in the northeastern and southeastern regions. Higher enrollment rates of 15.0% to 38.3% were observed along Interstate-70 and parts of the southwestern region.

Only 11% of Medicare beneficiaries in Missouri were using Medicare Managed Care during 2003. It appeared that almost all the HMOs operating in Missouri were working in selected portions of the state and only 19 HMOs were operating in Missouri during 2003.

Physicians Supply

For this report, the data on Physician Supply per 100,000 population was provided by the following seven physician categories: Primary Pediatricians, Obstetricians/Gynecologists (OB/GYN), General Internists, General Primary Care, Pediatric Specialty, Medical Specialty, and Surgical Specialty. The Geographic Information System (GIS) maps present the availability of these physicians in different counties of Missouri with specialty physicians available only in a few counties of Missouri.

Utilization

Data on Emergency Room (ER) visits by pay source suggested that approximately 33% of Missourians visited the ER during 2002. Contrary to the common belief that the uninsured crowd the ER, the visits by persons listed as self-pay/no charge reflected only 13% of the total, while 85% percent of the ER visits were by publicly or privately insured Missourians.

Community Context

Population

The population estimates by the Census Bureau indicated a population growth of 3.5% between 1997-2002. According to 2002 data, all regions have shown positive population growth except for the northeastern region. Statewide, the highest growth was observed in the population group ages 18-64, and a decline of 2% was observed in the younger population (ages 0-17). With the exception of Kansas City Metro and the southwestern region, the rest of the regions were attributed with negative population growth for those under age 18.

Race and Ethnicity

The statistics based on the 2000 U.S. Population Census suggested that White/Caucasian was the largest race representing 85% of the population, followed by the Black/African American race at 11%, and Hispanic and Asian races at 1.4% and 1.1%, respectively. The highest concentration of Blacks was in St. Louis City, where Blacks were the majority (51%) followed by Whites (44%),

and Hispanics (2%). Other counties with a high concentration of African American population (13% to 26%) were Jackson, St. Louis, Pemiscot, New Madrid, and Mississippi counties. Though Hispanics were only 2% of Missouri's total population, their highest concentration of 9% was located in McDonald and Sullivan counties followed by Pulaski, Jackson, Barry, and Saline counties where they were 4% to 6% of the population. The largest ethnic group was of Mexican origin, representing 67% of all the Hispanic population in Missouri.

Immigrant Population

The 2000 U.S. Census data showed that 2.7% of Missouri's population was foreign born. The highest concentration of foreign born residing in Missouri (5% to 6%) was in the counties of Sullivan, Jackson, Boone, Pulaski, McDonald, and St. Louis. Most of these counties had a greater concentration of Hispanic population.

Sullivan, McDonald, and Daviess stand out as the counties with the highest concentration (5% to 6%) of population who do not speak English at home. Sullivan and McDonald were the counties with the highest concentration of Hispanics. Interestingly, Daviess was one of the few counties with 99% Whites.

About 2% of all Missourians speak English less than very well. Their highest concentration (6.6% to 10.2%) was in the counties of McDonald, Sullivan, Pulaski, Scotland, Daviess, Jackson, Boone, Moniteau, and Morgan.

Economy

According to the 2002 estimates from the U.S. Census Bureau, Missouri ranked 23rd in the nation with 11.3% of its residents in poverty. Nineteen percent of Missouri's children under the age of 5 were in poverty and Missouri ranked 22nd in the nation for this age group. For the age group 5-17 years, 14% were in poverty ranking Missouri 21st in the nation.

Median household income in Missouri was $37,934 in 2000 and increased in 2002 to $40,309. Missouri ranked 32nd in the nation relating to the highest median household income in 2002. At the state level, the percent of households with income under $15,000 was 17.1%. The lowest percent (12.1%) of people with household income less than $15,000 was in the Kansas City Metro region, while the highest number was in the southeastern region at 28%. Eleven out of 12 counties in Missouri with the highest concentration (30% - 37%) were located in the southeastern region. Adair stands out as the only county outside this region with 31% of Missourians with income less than $15,000. Only 17.6% of all households in Missouri have incomes greater than $75,000.

The percent of young adults ages 16 and older not in the labor force, for the state of Missouri, was 35% in 2000. The highest percent of individuals, ages 16 and older who were not in the labor force was in the southeastern region (43.5%) and the lowest in the Kansas City Metro region (31.6%).

The unemployment rate for Missouri was 5.3% in the year 2000. The unemployment rate was highest in the southeastern region at 6.7% and the lowest in the Kansas City Metro region at 4%. When the county rates were compared to the state level, the southeastern region stood out with 21 out of 25 counties with an unemployment percent higher than the state level. Overall, 45 of 115 counties in Missouri had a percent of unemployment higher than the state level.

Living Arrangements

In Missouri, 11% of all individuals lived alone. The highest concentration (17%) of individuals 65 years and older was living in St. Louis City. The 2000 U.S. Census data also showed that 30% of all senior citizens lived alone in the state of Missouri and about 30% of all individuals in Missouri lived with a single parent or a non-married couple.

In Missouri, 70.3% of the houses were occupied by the owners in 2000 and the vacancy rate for Missouri was 7.4%. Half of Missouri's population had high school or less education in 2000.

Access Related Outcome Measures

DHSS maintains the vital statistics for Missouri. The 2003 data suggested that the highest number of non-hospital births (92) was in Webster county followed by Jackson county (62). In Missouri, less than 1% did not have any prenatal care. Another measure that describes health care access is *Inadequate Prenatal Care.* It is defined as, "fewer than five prenatal visits for pregnancies less than 37 weeks or fewer than eight visits for pregnancies 37 weeks or longer, alternatively care beginning after the first four months of pregnancy." In Missouri, about 10% of pregnant women had inadequate prenatal care in 2003. Data suggested that the highest number of pregnant women who received inadequate prenatal care were in the two metro regions (St Louis County, St Louis City, and Jackson County). The counties with the highest rate of inadequate prenatal care per 100 live births were Scotland (36.5), Pemiscot (28.9), Morgan (29), Knox (28.9), and Reynolds (25.9). Three counties in Missouri - Pemiscot (513), Ripley (390), and Dunklin (373) - located in the southeastern region, have the highest Preventable Hospitalization rate per 10,000. Fifty-three of the 115 counties in Missouri have a rate greater than the state level.

Introduction

National and state governments have been making attempts to take care of the health care needs of the most vulnerable population groups – the uninsured. Meanwhile, selected health care providers continue to meet the needs of the uninsured. These providers serve as the health care safety net for this impoverished and disadvantaged population.

In 2000, the Institute of Medicine (IOM), a watchdog in the health care industry, published a report on America's health care safety net.[5] The health care safety net is often defined as "the providers that organize and deliver a significant level of health care and other health related services to the uninsured, Medicaid, and other vulnerable patients."[6] The IOM has sounded the alarm that the nation's health care safety net is "**intact but endangered**" and emphasized the need to monitor the health care safety net.

In response to the IOM's report on America's Health Care Safety Net, the Agency for Healthcare Research and Quality (AHRQ) and Health Resources and Services Administration (HRSA) initiated a project, "Monitoring the Health Care Safety Net" with the following four main goals:

1. Provide baseline information and assessment of policymakers' information needs for the safety net system and its environment.

2. Establish an early warning system to alert policymakers to changes in safety net capacity and stability.

3. Provide information to policymakers about the status of safety net providers and the populations they serve that can help in designing interventions and strategies to achieve policy objectives.

4. Develop and implement a research agenda on the safety net and access-related issues for low-income populations.

The project emphasized that in order to accomplish these goals there was a need to understand the safety net and how to measure it. Without appropriate measures to assess the safety net and the baseline conditions, evaluating the impact of policy changes will be difficult. With this in mind, the two agencies identified 118 specific measures available from existing data sources that could be helpful to track the effect of any actions on the safety net. Appendix 1 contains the list of these measures, their definitions, and data sources. These cover the different aspects of a safety net: Demand, Structure, Environment, and Support. The data for the 118 measures was based on 1999 data at the local level like city, county, and metropolitan areas as well as at the state. Examples of measures regarding the safety net include emergency room visits and cost of care per insured patient. In some cases proxy measures were necessary to use, if a more direct, closely related measure was not available. For example, access to primary care can be measured by the volume and increase in emergency room visits for non-emergent care, including preventable hospitalizations.

[5] Institute of Medicine (2000).

[6] Urgent Matters Safety Net Assessment Team (2004), defined safety net as, " - A term that has come to refer broadly to public hospitals, community health centers, public health departments, faith based clinics, and others who, either by mission or mandate, provide significant amounts of health care to people who are uninsured or underinsured and who cannot cover the costs of care from their own resources."

This information was then provided to the states in the form of three books and made available through the Internet, with the objective that with access to this data, states would be in a better position to understand the provisions of safety net services at the smallest geographic level.

In Monitoring the Health Care Safety Net, Book III, Chapter 1, understanding the data sources for the states was discussed (Blewett and Beebe, 2003). In the Public Health Report, 2004 the authors described two of the four components of the safety net - Structure and Demand (the other two components were Environment and Support), and discussed the pros and cons of different types of data that states could use to measure the safety net (Blewett and Beebe, 2004). These data sources are administrative data, regulatory data, budget information, state initiated surveys and national surveys.

The IOM report further stated that the nation's health care safety net lacks integration and is not a comprehensive system.[7] Rather, it is a patchwork of health care institutions, financing mechanisms, and programs. The health care safety net varies dramatically not only across the country, but between states, and within states and at the localized level. The report also emphasized that there is a threat to the core safety net providers primarily due to the fact that the number of uninsured people are growing, direct and indirect subsidies that have helped finance uncompensated care are eroding, and the rapid growth of Medicaid managed care is having many adverse effects. The recommendations from the Committee on the Changing Market, Managed Care, and Future Viability of Safety Net Providers, are provided in Appendix 1(a).

On the part of Missouri, the first step was to identify good sources of data in the state. The Missouri Department of Health and Senior Services (DHSS) updated the existing indicators used to measure the health care safety net and where possible, enriched the data by identifying new measures, and gathered data from different departments of state. Data are presented in this report using tables, figures, Geographical Information System (GIS) maps.

The data used and described in this report, based on the 118 indicators from AHRQ, will not be regularly updated at the federal level. Therefore, the state will need to establish a mechanism and process to update this data set on a regular basis as there is no central repository for all of the indicators described in this report; some of the indicators require data to be obtained from different sources; and some of the data is updated at different times of the year. Maintaining a comprehensive data set on the status of the health care safety net would ensure the availability of current data to the state and local policy makers so that the safety net is appropriately assessed and resources are continually directed towards the priority areas. The work completed thus far in this regard is contained in this report.

[7] IOM refers to the study by Baxter and Mecanic, 1997.

1. Demand for Safety Net

Background Information

Demand refers to the extent of need for safety net services. In any given local area, demand is affected by a wide variety of factors, particularly the size of the population potentially using safety net providers and the intensity of their need for services. The number of people who are uninsured or are covered by Medicaid, the size of the low-income population, and the number of individuals with major health problems all have an impact on the demand for safety net services. At the individual level, these factors-largely related to poverty and poor health status-affect personal health maintenance and disease/condition management. In addition, insurance status, poverty, and poor health influence the personal circumstances and resources available to individuals and families for accessing needed health care.[8]

AHRQ prescribed four different measures for the *Demand for Safety Net Services*. These are:

- Percent uninsured
- Percent below the federal poverty level
- Percent with disability
- AIDS cases per 100,000 population

For each indicator, AHRQ uses a different age grouping. Percent uninsured is divided into: under 5 years of age, under age 65, and below 200% of the federal poverty level. The two other indicators, percent below poverty and percent with disability are categorized by three different age groups and are based on the 2000 census data. The last indicator captures the cumulative number of individuals with AIDS.

Percent Uninsured

The percent uninsured for Missouri is available from various sources. The U.S. Census Bureau Current Population Survey (CPS) provides state and national data annually on the percent of uninsured. According to 2002-2003 CPS data, 11% of Missourians were uninsured, with 13% of the uninsured between the ages of 18 and older, and 7% of the children ages 0-17. County level data is not available from CPS. In 2003, DHSS conducted a county-level household survey with adults ages 18 and older – the Missouri County Level Study, 2003. The survey included a question on health care coverage. Based on this study, the percent of uninsured adults ages 18-64 was 12.3%. In 2004, DHSS conducted the Health Insurance Coverage and Access Survey (HICAS) as part of the HRSA State Planning Grant. This survey of households collected information on health insurance coverage for all household members. Findings from this study indicated a state uninsurance rate of 8.4% (at the time of the survey) for all age groups; 3.4% of Missouri's children under age 18 were uninsured; and 12.3% of adults, ages 18 and older were uninsured at the time of the survey. Both surveys provided state, regional and county-level uninsurance rates. Therefore, for the purpose of this report, county-level data from the two Missouri surveys were used to help measure the demand for the safety net in the different geographical areas of the state.

[8]Billings J, Weinick, R. M. 2003. Monitoring the Health Care Safety Net, Book I: A Data Book for Metropolitan Areas. Agency for Healthcare Research and Quality, Publications No 03-0025. Chapter 3, pg 12.

The seven regional comparisons used in this report were: St. Louis Metro, Kansas City Metro, Northeastern, Northwestern, Southeastern, Southwestern, and Central shown in Figure 1.1. Table 1.1 and Figure 1.1 compares the regional and state level uninsurance rates for the two state surveys.

Table 1.1: Percent Uninsured

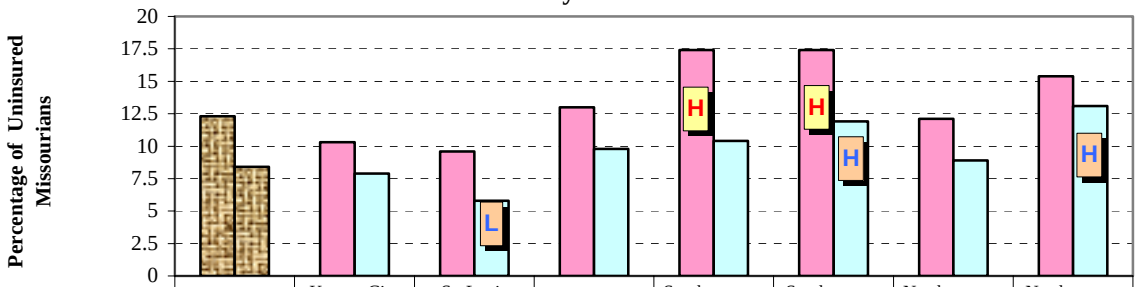
BRFSS Regions	Missourians 18 Years and Older* (Missouri County level Study, 2003)		All Missourians* (Missouri Health Care Insurance and Access Survey, 2004)	
	Uninsurance Rate	Confidence Interval	Uninsurance Rate	Confidence Interval
Missouri	12.3	(11.06 – 13.57)	8.4	(7.60 – 9.31)
Kansas City Metro	10.3	(7.72 – 12.82)	7.9	(6.08 – 10.20)
St. Louis Metro	9.6	(6.58 – 12.58)	5.8	(4.52 – 7.38) L
Central Region	13.0	(11.39 – 14.68)	9.8	(7.55 – 12.53)
Southwestern Region	17.4	(15.36 – 19.47) H	10.4	(8.23 – 13.08)
Southeastern Region	17.4	(15.58 – 19.14) H	11.9	(9.34 – 15.09) H
Northwestern Region	12.1	(9.64 – 14.50)	8.9	(6.74 – 11.59)
Northeastern Region	15.4	(13.20 – 17.59)	13.1	(10.07 – 16.88) H

*Reasons for the differences are:

- The uninsurance rates for these surveys cannot be compared since different age groups were used in the analyses
- Sample selection and size - Missouri County Level Study survey was much larger than the HICAS (County-level 15,000 respondents; HICAS 7,000 respondents)
- Survey administration - Four general timeframes are commonly used in measuring coverage: (1) at the time of the survey or point-in-time, (2) over an entire year, (3) for a portion of the year, and (4) all or part of the year. These different approaches yield different numbers because of the continual movement of people into and out of the uninsured population. - Missouri County Level Study was administered over 12-months, 2002-2003; HICAS was March-July 2004
- Survey question design and survey questions were different. Some surveys include all public health insurance names, others do not.

L: Regional uninsurance rate is significantly lower than the uninsurance rate at the state level
H: Regional uninsurance rate is significantly higher than the uninsurance rate at the state level

Figure 1.1: Regional Comparison of Percent Uninsured
Demand for Safety Net Services



	Missouri	Kansas City Metro	St. Louis Metro	Central Region	Southwestern Region	Southeastern Region	Northwestern Region	Northeastern Region
Missourians 18 Years and Older	12.3	10.3	9.6	13	17.4	17.4	12.1	15.4
Missourians All Ages	8.4	7.9	5.8	9.8	10.4	11.9	8.9	13.1

Regions

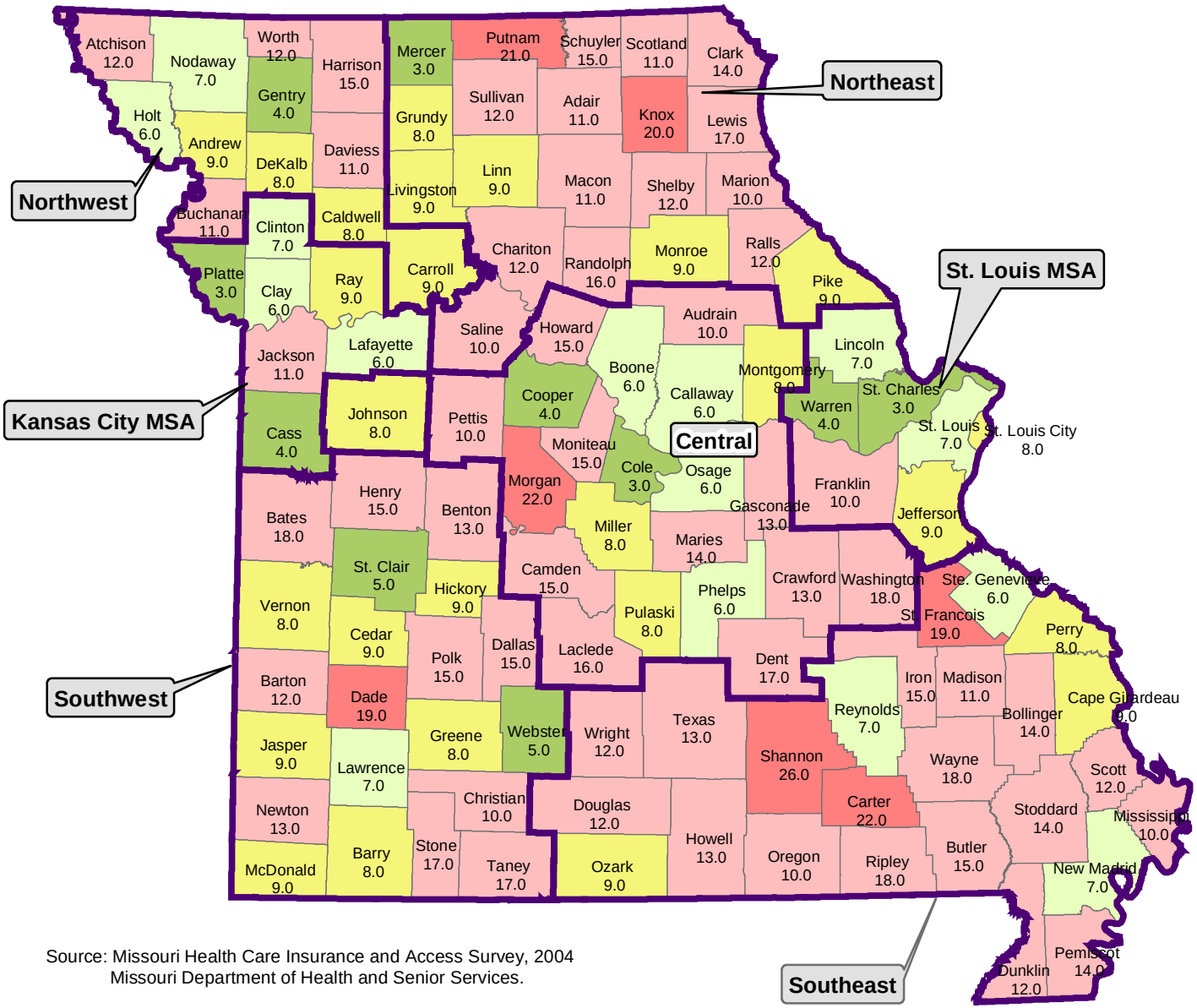
The uninsurance rates from the Missouri County level Study, 2003 are in pink and the Missouri Health Care Insurance and Access Survey, 2004 are in blue
L: Regional uninsurance rate is significantly lower than the uninsurance rate at the state level
H: Regional uninsurance rate is significantly higher than the uninsurance rate at the state level

In Figure 1.1, the disparity among the regions is displayed. For the age group ≥18, the uninsurance rates for the southeastern and southwestern regions are significantly (statistically) higher than the state's uninsurance rate. Based on HICAS, the uninsurance rates for southeastern and northeastern regions are significantly higher than the state level, whereas, for the St. Louis metro region, it is lower than the state rate.

A comparison of the uninsurance rates from the Missouri County Level Study for adults aged ≥18 shows 73 of the 115 counties in Missouri had an uninsurance rate greater than the state rate of 12.3%. Interestingly, all the counties in the northeastern and southwestern regions had uninsurance rates greater than the state level. A comparison of county-level uninsurance rates for all age groups, using the HICAS report, shows 78 counties with an uninsurance rate exceeding the state rate of 8.4%.

Map 1.1, Map 1.2 and Table 1.2 portrays the county-level rates of uninsurance based on these two surveys.

Map 1.1: Uninsurance Rates for All Missourians by Missouri Counties, 2004



% Uninsured, All Missourians

- 3 - 5
- 5.1 - 7.4
- 7.5 - 9.3
- 9.4 - 18
- 18.1 - 26
- 7 BRFSS Regions
- **Labels** County Name and the Rate

State Level Uninsurance Rates
(Different Data Sources)

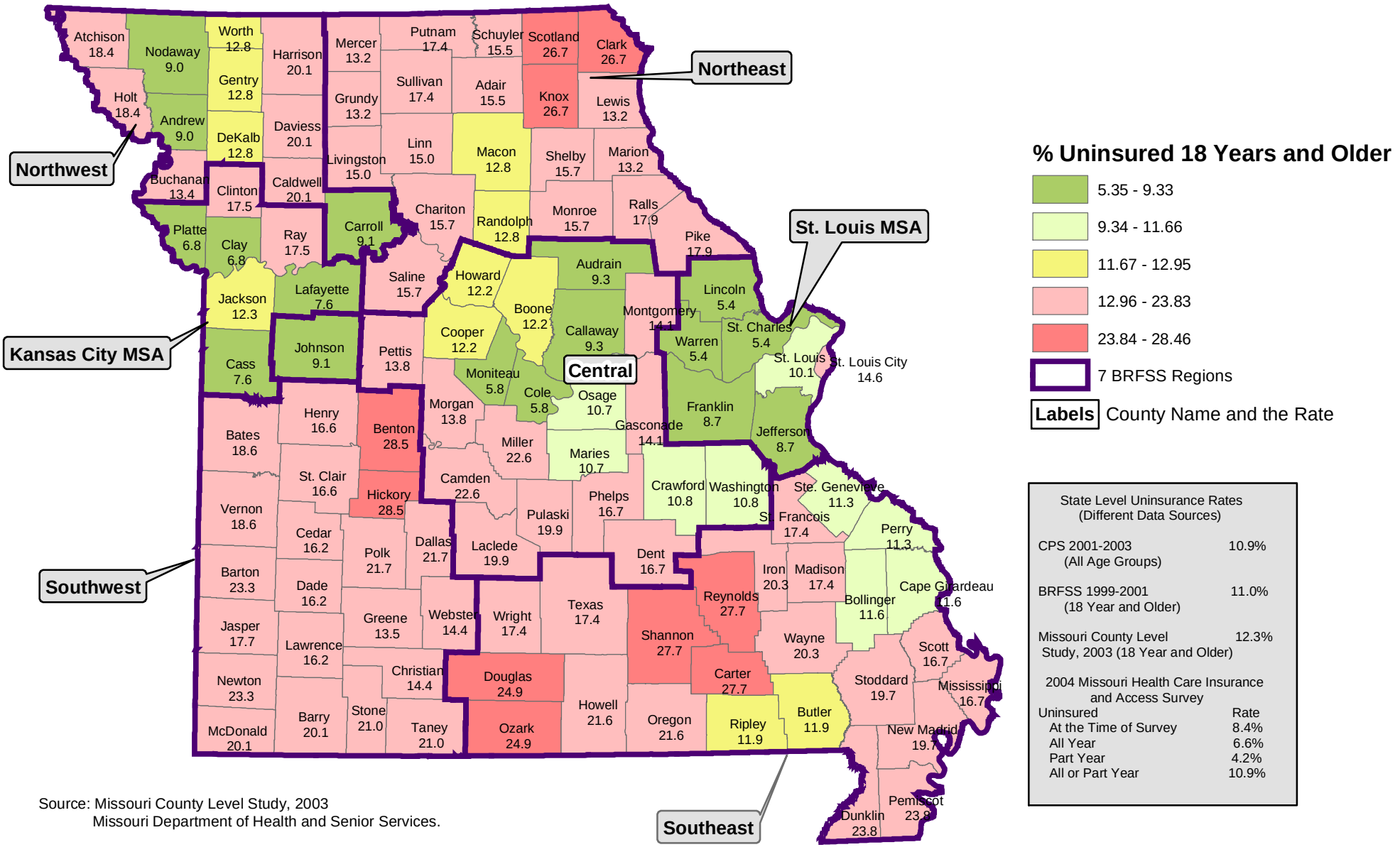
CPS 2001-2003 (All Age Groups)	10.9%
BRFSS 1999-2001 (18 Year or Older)	11.0%
Missouri County Level Study, 2003 (18 Year or Older)	12.3%

2004 Missouri Health Care Insurance and Access Survey

Uninsured	Rate
At the Time of Survey	8.4%
All Year	6.6%
Part Year	4.2%
All or Part Year	10.9%

Source: Missouri Health Care Insurance and Access Survey, 2004
Missouri Department of Health and Senior Services.

Map 1.2: Uninsurance Rates for Age Group 18 and Older by Missouri Counties, 2004



% Uninsured 18 Years and Older

- 5.35 - 9.33
- 9.34 - 11.66
- 11.67 - 12.95
- 12.96 - 23.83
- 23.84 - 28.46
- 7 BRFSS Regions
- **Labels** County Name and the Rate

State Level Uninsurance Rates
(Different Data Sources)

CPS 2001-2003 (All Age Groups)	10.9%
BRFSS 1999-2001 (18 Year and Older)	11.0%
Missouri County Level Study, 2003 (18 Year and Older)	12.3%

2004 Missouri Health Care Insurance and Access Survey

Uninsured	Rate
At the Time of Survey	8.4%
All Year	6.6%
Part Year	4.2%
All or Part Year	10.9%

Source: Missouri County Level Study, 2003
Missouri Department of Health and Senior Services.

Table 1.2. Uninsurance Rate by Missouri Counties, 2004

Region/County	Uninsured	Region/County	Uninsured	Region/County	Uninsured
Kansas City Metro	**7.9%**	**Northeastern Missouri**	**13.1%**	**Southeastern Missouri**	**11.9%**
Cass	4.30%	Adair	11.20%	Bollinger	14.00%
Clay	6.10%	Chariton	12.10%	Butler	15.30%
Clinton	6.60%	Clark	13.80%	Cape Girardeau	9.10%
Jackson	11.00%	Grundy	8.30%	Carter	21.60%
Lafayette	5.60%	Knox	19.50%	Douglas	11.50%
Platte	2.70%	Lewis	16.60%	Dunklin	11.90%
Ray	8.70%	Linn	8.50%	Howell	13.20%
St. Louis Metro	**5.8%**	Livingston	8.60%	Iron	14.50%
Franklin	10.30%	Macon	11.00%	Madison	10.90%
Jefferson	8.60%	Marion	10.00%	Mississippi	10.40%
Lincoln	7.40%	Mercer	3.00%	New Madrid	7.00%
St. Charles	3.10%	Monroe	8.70%	Oregon	9.60%
St. Louis City	7.70%	Pike	9.40%	Ozark	8.70%
St. Louis County	6.70%	Putnam	20.50%	Pemiscot	13.70%
Warren	4.20%	Ralls	12.20%	Perry	7.90%
Central Missouri	**9.8%**	Randolph	16.20%	Reynolds	6.60%
Audrain	9.90%	Saline	10.00%	Ripley	17.60%
Boone	5.80%	Schuyler	15.20%	Scott	11.70%
Callaway	6.30%	Scotland	11.20%	Shannon	25.70%
Camden	14.50%	Shelby	12.40%	St. Francois	18.80%
Cole	3.20%	Sullivan	12.10%	Ste. Genevieve	6.30%
Cooper	4.00%	**Northwestern Missouri**	**8.9%**	Stoddard	14.30%
Crawford	12.60%	Andrew	9.30%	Texas	13.20%
Dent	17.30%	Atchison	11.70%	Wayne	18.20%
Gasconade	12.60%	Buchanan	11.30%	Wright	11.80%
Howard	15.30%	Caldwell	8.10%	**Southwestern Missouri**	**10.4%**
Laclede	16.20%	Carroll	8.50%	Barry	7.70%
Maries	14.30%	Daviess	11.40%	Barton	12.00%
Miller	7.90%	De Kalb	7.60%	Bates	18.30%
Moniteau	14.60%	Gentry	3.70%	Benton	12.50%
Montgomery	7.60%	Harrison	14.70%	Cedar	9.00%
Morgan	22.10%	Holt	6.10%	Christian	9.60%
Osage	6.30%	Johnson	8.40%	Dade	18.70%
Pettis	9.50%	Nodaway	7.30%	Dallas	15.10%
Phelps	6.40%	Worth	12.30%	Greene	8.40%
Pulaski	7.90%			Henry	15.10%
Washington	18.20%			Hickory	8.80%
				Jasper	9.10%
				Lawrence	6.90%
				McDonald	9.00%
				Newton	12.80%
Missouri	**8.4%**			Polk	14.80%
				St. Clair	5.40%
				Stone	17.20%
				Taney	16.70%
				Vernon	7.70%
Source: Missouri Health Care Insurance and Access Survey, 2004				Webster	4.60%

Percent Below Poverty

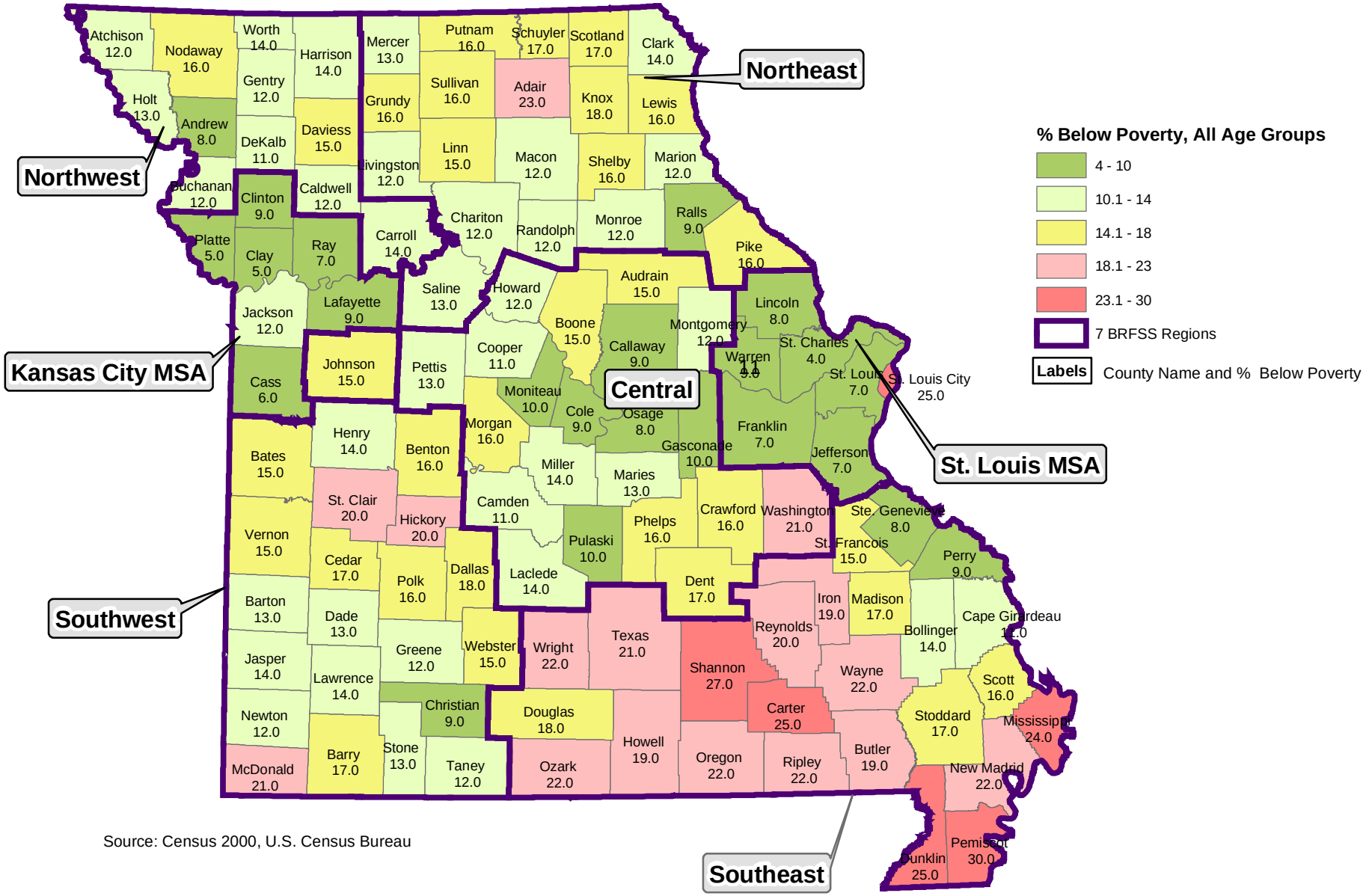
In 2000, about 12% of the Missouri residents were living below the federal poverty level (this equates to $18,852 annually for a family of four based on the 2004 Guideline). The poverty rate is highest for the age group 0-17 years and lowest for the age group 65 and older. A regional comparison suggests that both overall and within different age groups, the rate of below poverty is greater than the state level in all regions except the two metro regions of Kansas City and St. Louis (Table 1.3). The county level rates for Missourians of all age groups are portrayed in Map 1.3. Appendix 1(b) includes maps portraying the percent below poverty by age groups for Missouri counties.

Table 1.3: Percent Below Poverty, 2000

BRFSS Regions	Total	Ages 0-17	Ages 18-64	Ages 65+
Missouri	11.7	15.3	10.4	9.9
Kansas City Metro	6.7	8.3	5.8	6.9
St. Louis Metro	8.4	11.0	7.2	7.9
Central Region	12.4	16.0	11.1	10.5
Southwestern Region	14.4	19.7	12.7	11.9
Southeastern Region	18.7	24.8	16.4	16.2
Northwestern Region	12.1	14.0	11.2	11.3
Northeastern Region	14.1	17.6	12.6	12.8

Source: U.S. Census 2000
Notes: The regional statistics are un-weighted averages

Map 1.3: Percent of Missourians Below Poverty Level by Missouri Counties, 2000



Source: Census 2000, U.S. Census Bureau

Percent With Disability

The 2000 U.S. Census data suggested that about 8% of Missourians ages 5-20 were living with some form of disability and 43% percent of the senior citizens in Missouri were disabled. The regional rates of disability for the age group 5-20 were lower than the state level in all regions except the southeastern region. In the central, the two southern, and the northeastern regions, the disability rates were higher than the state level for the age group 21-64 years. The two southern regions and the northeastern region had a disability rate greater than the state level for senior citizens (Table1.4). Appendix 1(c) includes maps portraying the county level rates of disability.

Table 1.4: Percent With a Disability, 2000

BRFSS Regions	Ages 5-20	Ages 21-64	Ages 65+
Missouri	8.0	18.2	42.6
Kansas City Metro	6.1	14.8	36.8
St. Louis Metro	7.3	15.2	37.2
Central Region	7.8	19.4	42.6
Southwestern Region	7.2	20.4	42.7
Southeastern Region	8.1	24.2	48.1
Northwestern Region	6.5	17.3	40.3
Northeastern Region	7.5	18.8	42.7

Source: U.S. Census 2000
Notes: The regional statistics are un-weighted averages

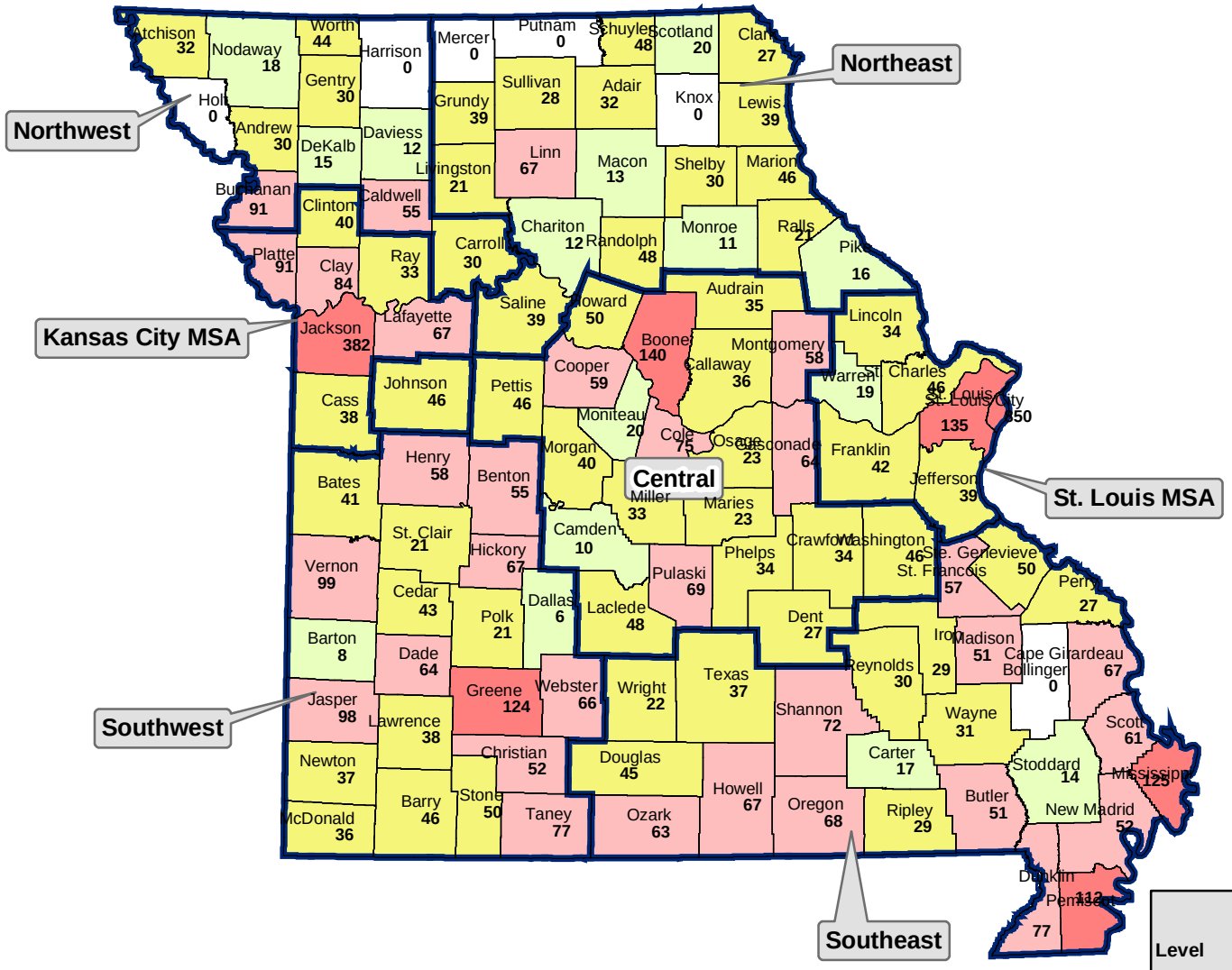
Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS)

AHRQ defined the rate for AIDS as the cumulative number of individuals with AIDS reported to the Centers for Disease Control and Prevention, divided by the total population, multiplied by 100,000. There are several ways to look at the HIV/AIDS rates. One way is to look at the cumulative HIV and AIDS cases regardless of whether the infected person is alive or dead. The second way is to look at the new cases (incidence) of HIV and AIDS, third is to only include those still living and so on. For the purpose of this report, *Living HIV and AIDS Diagnosed Persons in the Counties of Missouri* was selected. The areas of the state with the highest demand on the safety net due to HIV and AIDS are portrayed in Map 1.4.

Data were also available separately for HIV and AIDS by counties in Missouri. Appendix 1(d) contains maps that show the numbers and the rate per 100,000 people for both HIV and AIDS cases combined and separately by county.

When comparing state and county data, it is also important to look at the national and the global perspective as well. This report found a similar rate at the national level but it was based on only 33 states since the rest of the states have laws or regulation that prohibit confidential name-based reporting (Table 1.5).

Map 1.4: Living HIV and AIDS Diagnosed Persons (Rate per 100,000) by Missouri Counties, 2003



HIV and AIDS Cases Per 100,000

- No HIV or AIDS Case in this County
- 1 - 20
- 21 - 50
- 51 - 100
- 101 - 850
- 7 BRFSS Regions

Label: County Name and Cases per 100,000

Living HIV and AIDS Diagnosed Persons

Level	Year	Number of Cases	Rate per 100,000
Missouri	2003	9,413	168
United States*	2003	351,614	212

*** This estimate is based on the data from the 33 states only.**

Source: Office of Surveillance, Division of Environmental Health and Communicable Disease Prevention, 2003, Missouri Department of Health and Senior Services.

Table 1.5: Living HIV and AIDS Diagnosed Persons			
Level	**Year**	**Number of Cases**	**Rate per 100,000**
Missouri	2003	9,413	168
United States*	2003	351,614	212

Source: 2003 Epidemiologic Profiles of HIV Disease and STDs in Missouri
* This estimate is based on the data from 33 states only.

According to the Office of Surveillance in the Division of Environmental Health and Communicable Disease Prevention, DHSS, at the global level these rates are computed differently. UNAIDS' *AIDS Epidemic Update 2004* estimated that there were 950,000 people living with HIV in the United States. This suggests a rate of 323 per 100,000 people. That report also estimated the total number of people in the world living with HIV/AIDS in 2004 at 39.4 million. This suggested a global rate of 618 per 100,000 people.

The words HIV and AIDS in this report are used interchangeably.[9] In addition, the *2003 Epidemiologic Profiles of HIV Disease and STDs in Missouri* contains detailed information by other socio-economic characteristics. The web address is as follows: *http://www.dhss.mo.gov/HIV_STD_AIDS/2003EpidemiologicProfile.pdf.*

Prioritizing Need based on the Demand for the Safety Net

The 2004 Health Care Insurance and Access Survey indicated that 14.3% of the populations with incomes below the federal poverty level were uninsured. Nearly 16% of the uninsured had incomes between 100-133% FPL. The Missouri Medicaid currently covers parents up to 75% FPL; seniors and disabled up to 100% FPL; and children up to 300% FPL. Collectively, the percent uninsured, Medicaid enrollees, percent below poverty and percent ages 21-64 with a disability can be used as a proxy measure to identify the counties experiencing the greatest demand on the health care safety net. County level data for percent uninsured from the 2004 Health Care Insurance and Access Survey, most current Medicaid enrollment data, and percent below poverty and percent ages 21-64 with disability from the census 2000 were used to prepare a composite score. Then based on this composite for demand counties were ranked and divided into five groups (Quintiles).

The 23 counties (top 20%) with the highest demand on the safety net, based on the composite ranking of demand are listed in Table 1.6 whereas, full list of counties ranking is at Appendix 1(e).

[9] According to the *2003 Epidemiologic Profiles of HIV Disease and STDs in Missouri* the difference between HIV and AIDS is as "From the time a person is infected with human immunodeficiency virus (HIV) until death, he/she has HIV Disease. All persons with HIV disease can be sub classified as either an AIDS case (if they are in the later stages of the disease process and have met the case definition for AIDS) or an HIV case (if they are in the earlier stages of the disease process and have not met the AIDS case definition)."

Table 1.6: Ranking: Demand for Safety Net

(Counties By Composite and Individual Ranks)

	County Name	% Below Poverty	% With Disability (Ages 21-64)	Density of Uninsured and Medicaid Enrollees	Composite Demand
1	St. Louis City	112	111	115	338
2	Pemiscot	115	93	97	305
3	Washington	101	106	78	285
4	Dunklin	111	62	101	274
5	Stoddard	84	107	81	272
6	St. Francois	66	99	106	271
7	Phelps	81	104	80	265
8	Butler	94	65	99	258
9	New Madrid	108	89	61	258
10	Howell	95	75	82	252
11	Scott	75	72	104	251
12	Jasper	61	81	107	249
13	Texas	102	94	52	248
14	Hickory	98	109	40	247
15	Shannon	114	101	30	245
16	Madison	89	110	43	242
17	Morgan	77	86	79	242
18	Barry	85	88	68	241
19	Carter	113	105	23	241
20	Pike	71	113	55	239
21	Mississippi	110	53	75	238
22	Wayne	105	77	54	236
23	Benton	72	103	59	234

Source: Computation of these ranks are based on data from 2000 Census, Missouri Department of Social Services, and HICAS (2004)
Note: The higher rank is assigned to the county/city where the value of these indicators is higher. Therefore, indicating greater demand for the health care safety net. This ranking helps with the objective of identifying the counties with the greatest demand for the health care safety net in Missouri.

2. Financial Support for Safety Net Services

Background Information

Low-income individuals receive their health care in several ways. Health care services may be provided free or on a sliding-scale basis for uninsured individuals at clinics or health centers whose mission is to serve the low-income population. Hospitals and private doctors' offices may provide reduced-price or free charity care or may write off unpaid medical debts of individuals who cannot afford their services. For individuals covered by Medicaid or a State Children's Health Insurance Program, services may be provided on a fee-for-service basis or through a managed care organization. However, the waiting time for a clinic appointment can be several weeks, doctor's offices and hospitals may limit the amount of charity care they provide, and health care is a significant source of debt for many low-income families.

Financial support for safety net services comes in many forms, from insurance-type reimbursement or managed care arrangements in programs such as Medicaid, to grants that fund Community Health Centers (CHCs), to the distribution of funds from State uncompensated care pools. Additional support may come in the form of personnel, such as clinicians from the National Health Service Corps, or from drug assistance programs. Each of these types of support has a considerable influence on the health care delivery system in a local area, including the types of providers and services available to care for the low-income population.[10]

Indicators for determining the *Financial Support of the Safety Net Services,* as suggested by AHRQ, include:

- Medicaid Program Measures
  - Extent of Coverage
  - Percent below 200% FPL enrolled in Medicaid
- Growth in Medicaid
- Disproportionate Share Hospital Funds Per Person Below Poverty
- Relationship Between DSH Payments and Safety Net Performance
- Community Health Center in Area
- Uncompensated Care Pooling
- Prioritizing Need based on the Financial Support for Safety Net Services

Medicaid Program

Medicaid coverage is often associated with slight to moderate decreases in potentially preventable hospitalization rates and negative birth outcomes at both the place/county and MSA levels. The larger the proportion of the low-income population that is covered by Medicaid, the less likely the low-income population is to have access-related problems, including lacking a usual source of care and not having any physician visits; this association is moderate to strong."[11]

[10] Book I, Page 18, Chapter 4, Billings and Weinick (2003).
[11] Book I, Page 20, Chapter 4, Billings and Weinick (2003).

Extent of Coverage for Medicaid is defined as state-level standardized index of income eligibility levels for the Medicaid program for pregnant women, children, and infants. Table 2.1 provides the current State Fiscal Year (SFY) 2005 program guidelines by federal poverty guidelines.

Table 2.1: Federal Poverty Guidelines by Program, SFY05*	
Program	**Federal Poverty Level**
Medical Assistance for Families	75%
Medicaid for Pregnant Women	185%
MC+ for Kids (non SCHIP)	
Up to age 1	185%
Age 1 to 5	133%
Age 6 to 18	100%
MC+ for kids (SCHIP)	
Uninsured children up to age 19	
No cost	185%
$5 co-pay	225%
$62 to $252 monthly premium (No more than 5% of their income), plus $10 co-pay and $9 prescription co-pay	300%

Source: Family Support Division, Missouri Department of Social Services

The federal poverty guidelines by monthly income rates are provided in Table 2.2.

Table 2.2: Federal Poverty Guidelines (FPL)						
Percent FPL by 2005 Poverty Guidelines (Monthly Income Rates)						
Family Size	75%	100%	133%	185%	225%	300%
1	$599	$798	$1,061	$1,476	$1,795	$2,393
2	$802	$1,070	$1,422	$1,978	$2,406	$3,208
3	$1,006	$1,341	$1,784	$2,481	$3,017	$4,023
4	$1,210	$1,613	$2,145	$2,984	$3,629	$4,838
5	$1,414	$1,885	$2,506	$3,486	$4,240	$5,653
* Average TANF grant = $236/month						
** Minimum wage = $5.15/hour = $893/month ($10,716 annually)						

Source: Family Support Division, Missouri Department of Social Services
* These eligibility guidelines are good through April 2006

Based on the coverage guidelines for Medicaid, Table 2.3 provides the number and percent of Medicaid annual enrollment for 2002-2004, by Medicaid category.

Table 2.3. Medicaid Statistics for the State of Missouri

Month: May

	Year							
	2002		2003		2004		2005	
Medicaid Category	Number	% of total	Number	% of total	Number	% of total	Number	% of total
MC+ For Pregnant Women	12,798	1.4	13,673	1.4	14,113	1.4	15,099	1.5
Extended Women's Health Services	13,602	1.5	9,864	1.0	9,599	1.0	10,137	1.0
MC+ Family Healthcare	649,670	71.4	680,799	70.5	691,532	69.7	686,239	68.7
Old Age Assistance	68,681	7.6	76,939	8.0	80,436	8.1	83,084	8.3
Permanently and Totally Disabled	116,121	12.8	139,040	14.4	153,293	15.5	162,641	16.3
Assistance for the Blind	3,786	0.4	3,807	0.4	3,804	0.4	3,792	0.4
General Relief	2,634	0.3	3,017	0.3	2,966	0.3	2,787	0.3
Medicare Cost Savings Programs	18,006	2.0	13,289	1.4	10,270	1.0	8,495	0.9
Other Children Eligibility Types	23,038	2.5	23,373	2.4	23,911	2.4	24,536	2.5
Other Eligibility Categories	1,341	0.1	1,308	0.1	1,536	0.2	2,116	0.2
Total for Selection	909,677	100.0	965,109	100.0	991,460	100.0	998,926	100.0

Note: This data is provided to CHIME by Missouri Department of Social Services on monthly basis. This point in time data is for the month of May for each of the years 2002-2005

Source: Missouri Information for Community Assessment (MICA) 2002-05, Missouri Department of Health and Senior Services

Percent Below 200% FPL Enrolled in Medicaid Program is defined as the number of individuals under age 65 with family incomes less than 200% FPL enrolled in Medicaid, divided by the number of individuals under age 65 with family incomes less than 200% FPL. Based on the 1999-2001 Current Population Survey, 48% of the state's population with incomes less than 200% FPL were enrolled in Medicaid. Of the total Medicaid enrollees under age 65, 80% were low income (<200% FPL). County level data for this indicator were not readily available.

Growth in Medicaid

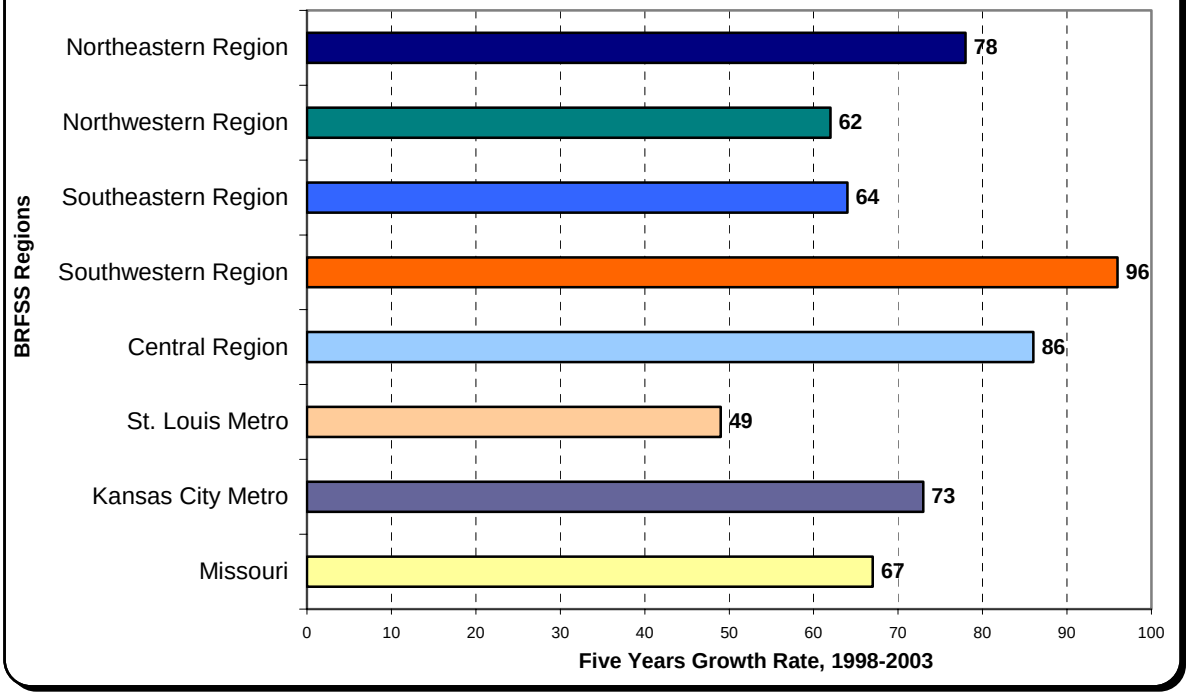
Regional and county level Medicaid enrollment data for June 30 of the respective year for the years 1998-2003 were provided by the Missouri Department of Social Services and are presented in Table 2.4 and Figure 2.1. The data indicated that there was a 67% growth in the Medicaid enrollment in Missouri between 1998 and 2003. The highest growth was noticed in the southwestern region where it almost doubled (increase of 96%). The growth in Medicaid correlates with the expansion of the State Children's Health Insurance Program (SCHIP) in 1998

as well as the downturn in the economy and loss of jobs, income, and employer-sponsored insurance for many residents.

Table 2.4: Medicaid Enrollment Growth in Missouri, 1998-2003						
BRFSS Regions	Percent of Annual Growth					5-Year Growth (%)
	1998-99	1999-00	2000-01	2001-02	2002-03	1998-03
Missouri	19	11	11	8	6	67
Kansas City Metro	16	12	13	10	8	73
St. Louis Metro	13	10	9	6	3	49
Central Region	25	13	13	9	6	86
Southwestern Region	29	13	14	9	9	96
Southeastern Region	22	8	9	7	6	64
Northwestern Region	20	8	10	7	6	62
Northeastern Region	23	11	13	9	7	78

Source: Missouri Department of Social Services

Figure 2.1: Medicaid Enrollment Growth in Missouri, 1998-2003 Regional Comparison



Calculating the annual and five-year growth rates of Medicaid enrollment can be used to monitor the financial support for the vulnerable population at the county level. The county-level Medicaid growth for the time period 1998 - 2003 is provided in Appendix 2(a).

Disproportionate Share Hospital Funds ($) per Person Below Poverty

Disproportionate Share Hospital funds are defined as the total Medicare Disproportionate Share Hospital (DSH) payments to hospitals, divided by the number of individuals with family incomes less than 100% FPL. The numerator is from the Centers for Medicare and Medicaid Services and the denominator is based on U.S. Census 2000 Medicaid DSH payments. According to the data provided by AHRQ, for every person in Missouri below 100% FPL, the state received about $89 in DSH payments in 2001 and that amounts to the total of $455,068,490. These payments were distributed to health care facilities including hospitals, mental health facilities, and rehabilitative centers. Of the $455 million received by the state in DSH payment, hospitals received almost $282 million. For the same time period, hospitals provided almost $238 million in charity care and accrued over $500 million in bad debt. The DSH payments received, by hospital and county, for 2001 are provided in Appendix 2(b).

Relationship Between DSH Payments and Safety Net Performance

Based on studies done by AHRQ, there appears to be a slight association between the financial support of the safety net and health outcomes, "with an increasing amount of DSH funds being associated with higher potentially preventable hospitalization rates and higher rates of negative birth outcomes. At the MSA level, increasing DSH payments have a moderate association with more children's preventable hospitalizations, and a slight to low association with more adult preventable hospitalizations. This finding likely reflects the fact that both significant quantities of uncompensated care (and associated DSH payments) and negative health outcomes are concentrated in areas where low-income populations are disproportionately represented."[12]

Community Health Center in the Area

This indicator describes the presence or the absence of a federally qualified Community Health Center (CHC) in the area. It is based on the Health Resources and Services Administration, Uniform Data System. In 2004, there were 90 CHCs and satellite clinics, including CHC look alike clinics, in the state. It should be observed that the Community Health Centers, the primary health care access points for the uninsured, are not evenly distributed in Missouri. Although there are 90 CHCs or satellite clinics in Missouri, 74 out of 115 counties are without any.

Since CHCs serve as primary health care providers for the uninsured and the other vulnerable populations, it is important to examine the availability of CHCs in the context of the potential recipients of these services by region. Based on county level uninsurance rates from the Missouri Health Care Insurance and Access Survey (2004), and Medicaid data from the Missouri Department of Social Services, two indicators - the *Number of Uninsured and Medicaid Enrollees* and *the population density of the Uninsured and Medicaid Enrollees* - were computed for the seven regions and are provided in Table 2.5. The second indicator suggested that the two metro regions have a high density of the vulnerable population. The GIS maps for these indicators are included as Appendix 2(c).

[12] Book I, Pages 19-20, Chapter 4, Billings and Weinick (2003).

Table 2.5: Safety Net Support - Federal Qualified Health Centers, 2004									
BRFSS Regions	**Number of FQHC/s or Satellite Clinic in the Area**	**Proportion of Counties Without FQHC/s or Satellite in the Area**	**Ratio of CHCs to Counties in the Area**	**Medicaid Enrollment in Missouri, Dec., 2004**	**Percent Uninsured Missourians 2004**	**Number Uninsured Missourians 2004**	**Total Medicaid and Uninsured (*Vulnerable Population*)**	**Number and % of Vulnerable Population Served by CHCs 2003**	**Density of Vulnerable Population**
Missouri	90	79/115	90 in 115	1,015,799	8.4	479,177	1,494,976	227,827 (15.2%)	22
Kansas City Metro	19	3/7	19 in 7	174,858	7.9	86,838	261,696	47,656 (18.2%)	68
St. Louis Metro	14	5/7	14 in 7	301,864	5.8	117,835	419,699	118,606 (28.3%)	110
Central Region	5	19/21	5 in 21	122,575	9.8	66,400	188,975	11,234 (6%)	14
Southwestern Region	7	16/21	7 in 21	168,423	10.4	87,594	256,017	7,328 (3%)	19
Southeastern Region	22	12/25	22 in 25	158,131	11.9	66,221	224,352	25,051 (11%)	14
Northwestern Region	12	7/13	12 in 13	39,264	8.9	21,645	60,909	10,166 (17%)	9
Northeastern Region	11	17/21	11 in 21	50,684	13.1	33,295	83,979	7,786 (9%)	7

Sources:

1. Regional uninsurance rates are based on Missouri Health Care Insurance and Access Survey (2004)
2. 2003 population estimates by US Census Bureau are used to estimate the regional numbers of uninsured
3. Medicaid Enrollment data is from Department of Social Services

Uncompensated Care Pooling

This indicator is defined as the presence or absence of an uncompensated care pool in the state. An uncompensated care pool helps finance hospital-based care for uninsured patients by providing financial support to hospitals and other providers to help defray the expenses of uncompensated care. Missouri does not have an uncompensated care pool. Only eight states have this pool: California, Connecticut, Iowa, Maryland, Massachusetts, New Jersey, New York, and Virginia.

Prioritizing Need based on the Financial Support for Safety Net Services

Insufficient data are available on the indicators of financial support for safety net services; therefore, identifying priority counties based on these measures is not appropriate. However, data from this section was taken into consideration when evaluating and prioritizing counties based on the safety net structure and health system context that is described in the next section.

3. Safety Net Structure and Health System Context

Background Information

Understanding the structure of the local safety net and the local health care delivery system is critical for assessing the status and performance of a safety net. Having resources available to provide services for uninsured, low-income, and other vulnerable populations is important in meeting the needs of these populations. However, the ability of vulnerable populations to obtain timely and effective care and the performance of providers offering care to Medicaid and uninsured patients can also be affected by a broad range of other factors related to the local health care delivery system. These aspects of health system context include hospital ownership mix, level of competition among hospitals, the extent of managed care penetration, the degree of concentration of uncompensated care, the presence of facilities with an explicit mission to serve vulnerable populations (such as public hospitals, some not-for-profit hospitals, and Community Health Centers), and the supply of physicians.

Defining which providers constitute the local safety net can be difficult, with the discussions often laden with strongly held positions about who is a "true" safety net provider. The recent Institute of Medicine report defined the safety net as "those providers that organize and deliver a significant level of health care and other related services to uninsured, Medicaid, and other vulnerable patients," recognizing that most communities have a "core safety net" of providers. These providers have two distinguishing characteristics: "(1) by legal mandate or explicitly adopted mission they maintain an 'open door,' offering access to services for patients regardless of their ability to pay; and (2) a substantial share of their patient mix is uninsured, Medicaid, and other vulnerable patients."[13]

The indicators in this section do not explicitly identify the safety net providers, but it does provide an overall picture of the provider mix. Safety net structure measures in this section include:

- Safety Net Structure – Inpatient Care
  - Hospital admissions by ownership type
  - Hospital admissions by teaching status
  - Number of Hospitals (2002

- Safety Net Structure – Ambulatory Care
  - Hospital outpatient capacity
  - Presence of a HRSA-sponsored Community Access Program (CAP) initiative

- Safety Net Structure – Concentration and Distribution of Inpatient Uncompensated Care and Medicaid Discharges
  - Market Concentration
  - Cost Shifting Index

[13] Institute of Medicine (2000).

- Gini Coefficient
- Percent Discharges in High-Burden Hospitals

The "health system context" for the local safety net includes measures such as:

- Health Care Delivery System
  - Managed care penetration and extent of competition
  - Physician supply per 100,000 population
  - Hospital bed supply and admission rates
  - Emergency Room visit rates

Safety Net Structure – Inpatient Care

The data source used to describe the inpatient care safety net structure was the 1999 American Hospital Association Annual Survey[14]. For these measures, statistics are based on the location of the hospital instead of the patient's origin, which may be from a different county.

Admissions by Hospital Ownership Type

The following three measures for Admissions by Hospital Ownership Type (limited to non-federal general medical/surgical facilities) are described in the safety net table:

1. *Percent Public*:	Number of admissions to public hospitals, divided by the total number of admissions to all area hospitals.
2. *Percent Not-For-Profit:*	Number of admissions to not-for-profit hospitals, divided by the total number of admissions to all area hospitals.
3. *Percent Investor Owned:*	Number of admissions to investor-owned hospitals, divided by the total number of admissions to all area hospitals.

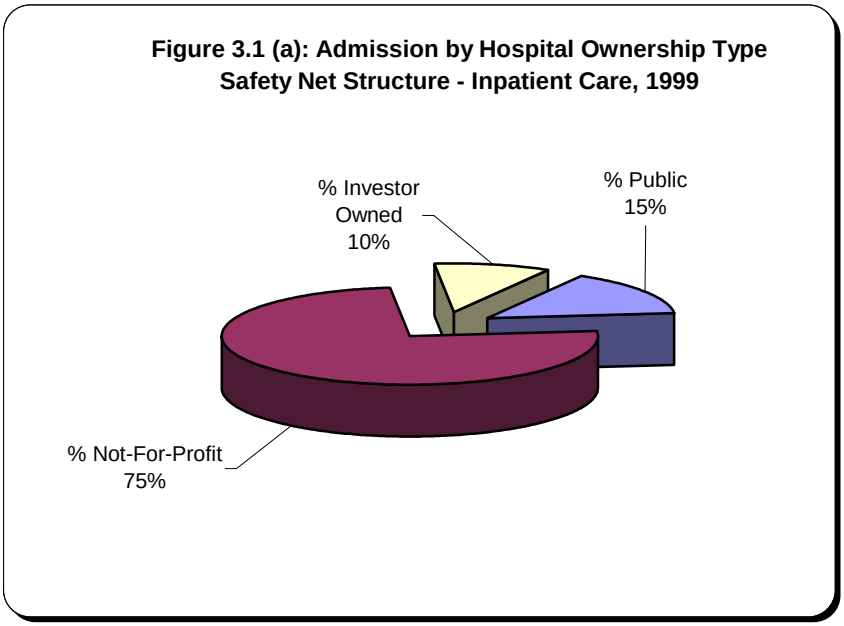
The 1999 American Hospital Association Annual Survey data indicated that in Missouri, 75% of the inpatient care was provided by hospitals owned by not-for-profit organizations. Table 3.1 and Figure 3.1 (a) shows the percent admissions by hospital ownership Missouri.

[14]Book II, Page 103, Billings and Weinick (2003).

Table 3.1: Safety Net Structure - Inpatient Care in Missouri, 1999		
		Percent
Admissions by Hospital Ownership Type	% Public	14.9
	% Not-For-Profit	75.2
	% Investor Owned	9.9
Admissions by Teaching Status	% No Teaching	59.2
	% Low Teaching	2.2
	% Moderate Teaching	18.7
	% Major Teaching	19.8

Reference: Monitoring the Health Care Safety Net Book II

Data Source: 1999 American Hospital Association Annual Survey



Reference: Monitoring the Health Care Safety Net Book II
Data Source: 1999 American Hospital Association Annual Survey

Admissions by Teaching Status

Admission by the type of teaching hospital (limited to non-federal general medical/surgical facilities) is provided in the following four categories:

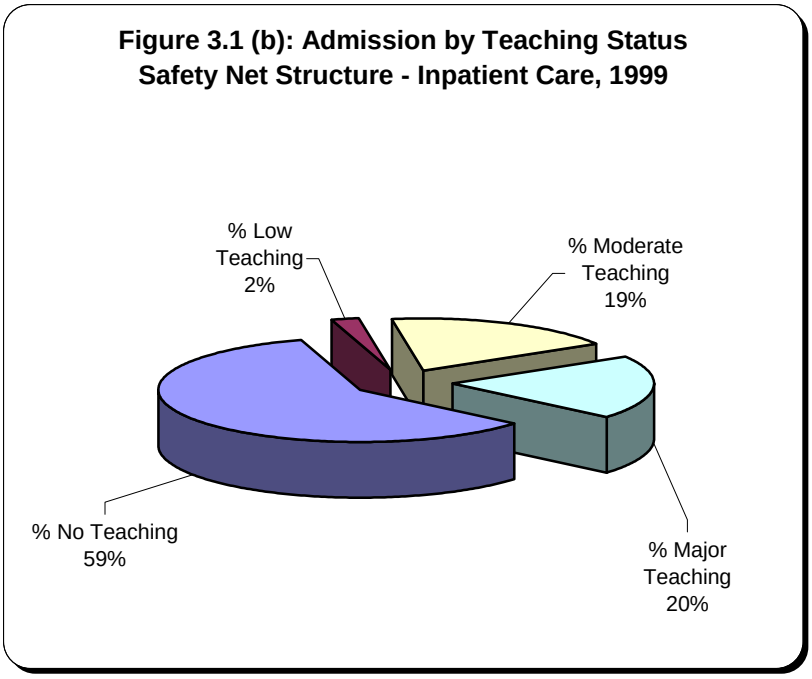
1. *Percent No Teaching*: Number of admissions to hospitals with no medical residents, divided by the total number of admissions to all area hospitals.
2. *Percent Low Teaching*: Number of admissions to hospitals with 1 to 4 medical residents per 100 staffed beds, divided by the total number of admissions to all area hospitals.

3. *Percent Moderate*: *Teaching* — Number of admissions to hospitals with 5 to 14 medical residents per 100-staffed beds, divided by the total number of admissions to all area hospitals.

4. *Percent Major Teaching*: Number of admissions to hospitals with 15 or more medical residents per 100-staffed beds, divided by the total number of admissions to all area hospitals.

About 60% of the inpatient care in Missouri was provided at the non-teaching hospitals. The distribution of inpatient-care in the state of Missouri by teaching status of the hospitals is shown in Table 3.1 and Figure 3.1 (b).

Figure 3.1 (b): Admission by Teaching Status
Safety Net Structure - Inpatient Care, 1999



Reference: Monitoring the Health Care Safety Net Book II
Data Source: 1999 American Hospital Association Annual Survey

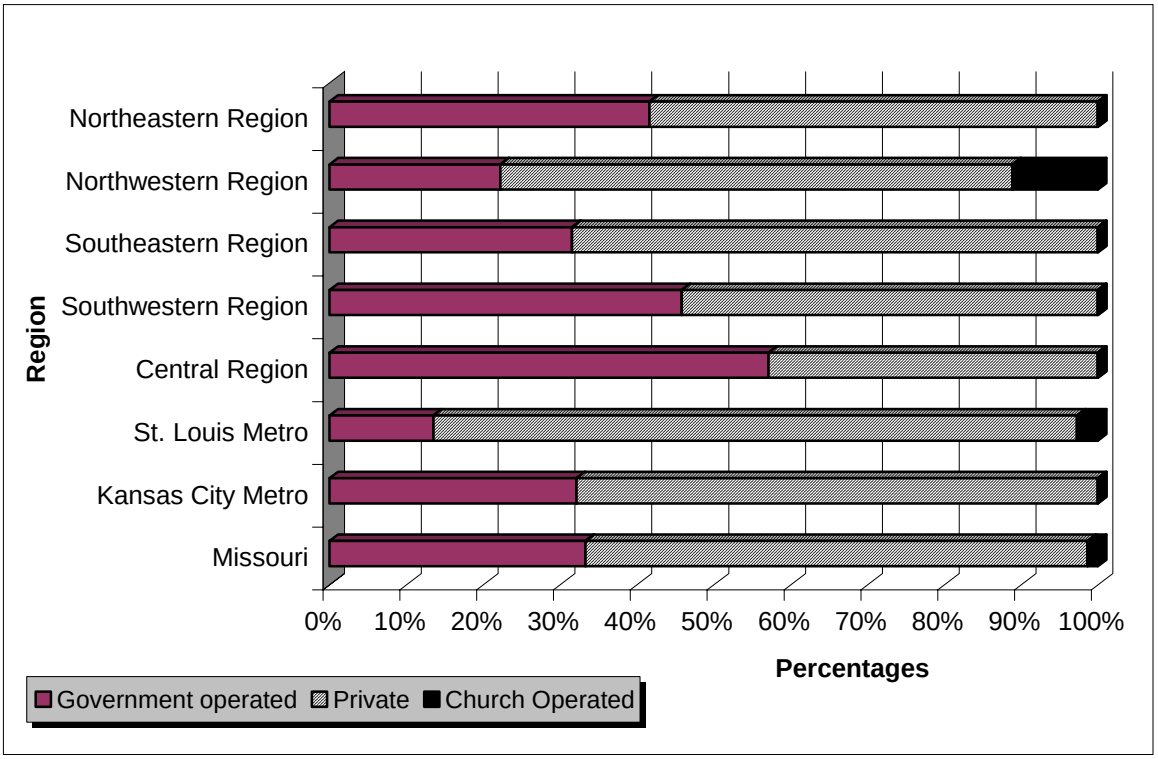
Number of Hospitals (2002)

The data on the number of hospitals by the three categories Government operated, Private, and Church Operated have been added to the existing table. According to 2002 data, there were 150 hospitals in Missouri; 50 were government operated, 98 were privately operated, and churches operated two. Table 3.2 and Figure 3.2 depict this distribution by the seven regions in Missouri. Forty-four counties in Missouri do not have a hospital. With the exception of the metro regions of Kansas City and St. Louis, two in every five counties in the remaining regions do not have a hospital.

Table 3.2: Number of Hospitals by Type of Control Safety Net Structure - Inpatient Care					
BRFSS Regions	**Total**	**Government Operated**	**Private**	**Church Operated**	**Proportion of Counties Without Hospital and Percent**
Missouri	150	50	98	2	44/115 (38%)
Kansas City Metro	28	9	19	0	0/7 (0%)
St. Louis Metro	37	5	31	1	1/7 (14%)
Central Region	21	12	9	0	7/21 (43%)
Southwestern Region	24	11	13	0	8/21 (38%)
Southeastern Region	19	6	13	0	11/25 (44%)
Northwestern Region	9	2	6	1	6/13 (46%)
Northeastern Region	12	5	7	0	9/21 (43%)

Source: Center for Health Information, Management and Evaluation (CHIME), Missouri Department of Health and Senior Services, 2002

Figure 3.2: Percent of Hospitals by Type of Control
Safety Net Structure - Inpatient Care, 2002



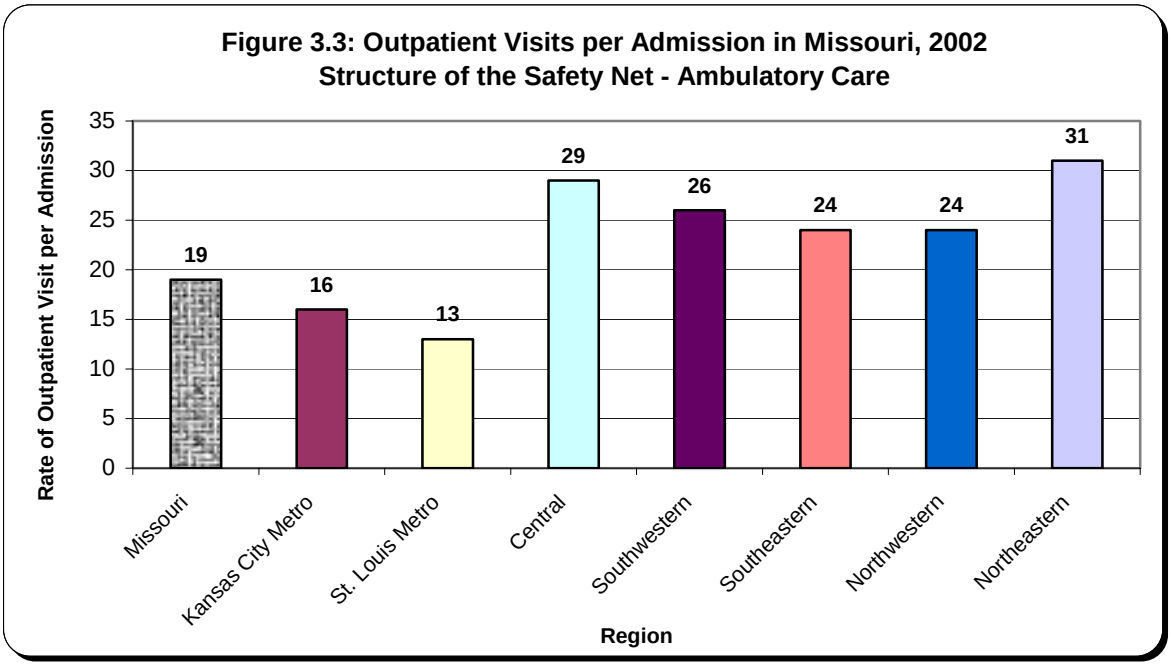
Source: Center for Health Information, Management and Evaluation (CHIME), Missouri Department of Health and Senior Services, 2002

Structure of the Safety Net - Ambulatory Care

Hospital Outpatient Capacity: Outpatient Visits per Admission

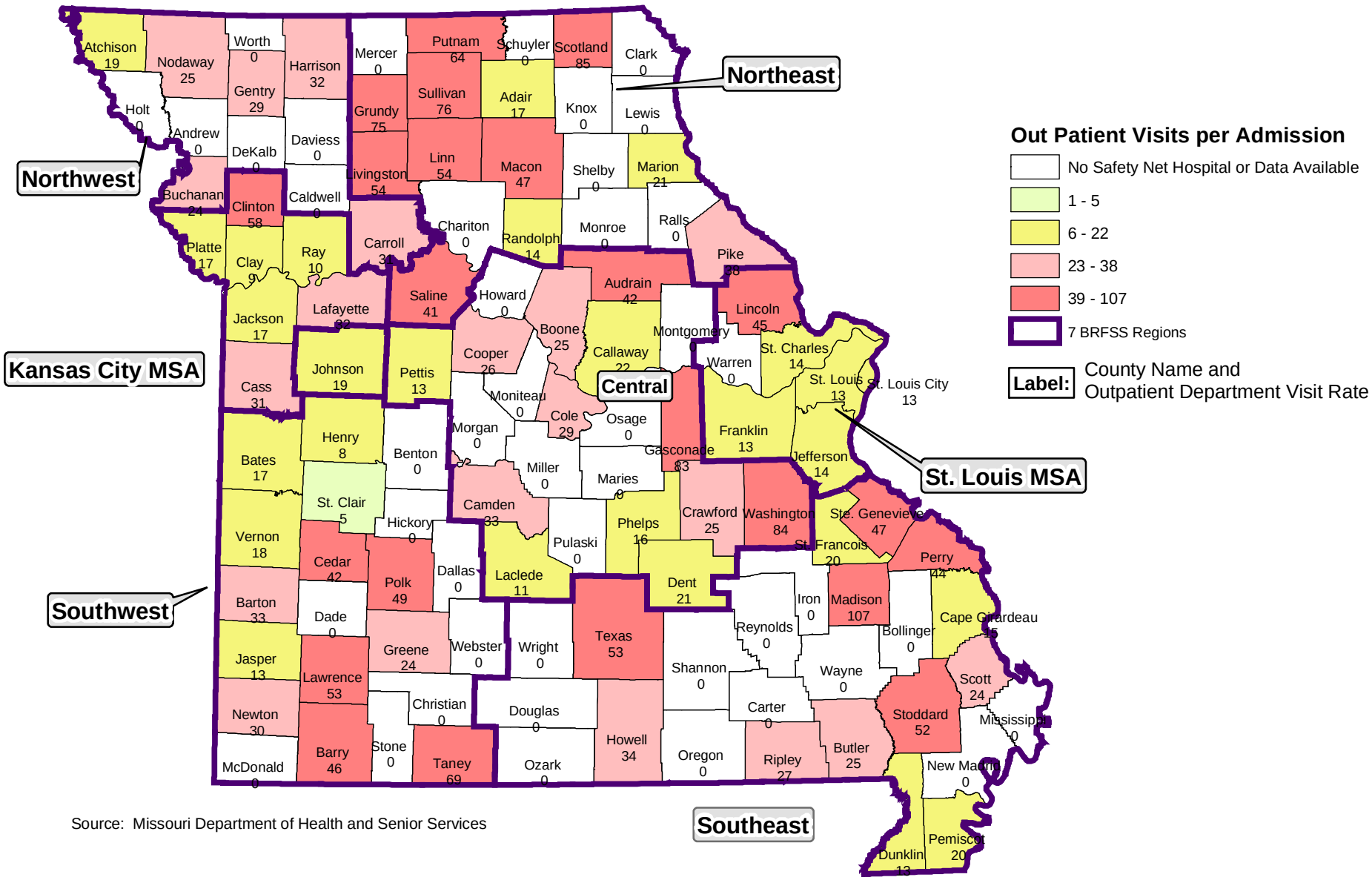
The indicator of ambulatory care for the safety net structure is defined as the number of visits to the outpatient department of area hospitals divided by number of admissions to area hospitals. The rates for outpatient visits per admission were based the on 2002 Annual Survey of the Hospitals (CHIME, Missouri Department of Health and Senior Services). Since these numbers are based on the county of origin, the rates have been calculated for all counties in Missouri including the ones without a hospital.

With the exception of the two metro regions, the rest of the regions in Missouri had outpatient visits per admission higher than the state level. The regional comparison of this rate is presented in Figure 3.3. County level rates of Outpatient Visits per Admission are portrayed in Map 3.1 and Table 3.3.



Source: CHIME, Missouri Department of Health and Senior Services, 2002

Map 3.1: Outpatient Department Visit per Admission to the Area Hospital in Missouri, 2002



Source: Missouri Department of Health and Senior Services

Table 3.3: Outpatient Department Visits per Admission to Area Hospital in Missouri, 2002								
Region/County	**Rate**		**Region/County**	**Rate**		**Region/County**	**Rate**
Kansas City Metro	16		**Northeastern Missouri**	31		**Southeastern Missouri**	24
Cass	31		Adair	17		Bollinger	No Hospital
Clay	9		Chariton	No Hospital		Butler	25
Clinton	58		Clark	No Hospital		Cape Girardeau	15
Jackson	17		Grundy	75		Carter	No Hospital
Lafayette	32		Knox	No Hospital		Douglas	No Hospital
Platte	17		Lewis	No Hospital		Dunklin	13
Ray	10		Linn	54		Howell	34
St. Louis Metro	13		Livingston	54		Iron	No Hospital
Franklin	13		Macon	47		Madison	107
Jefferson	14		Marion	21		Mississippi	No Hospital
Lincoln	45		Mercer	No Hospital		New Madrid	No Hospital
St. Charles	14		Monroe	No Hospital		Oregon	No Hospital
St. Louis City	13		Pike	38		Ozark	No Hospital
St. Louis County	13		Putnam	64		Pemiscot	20
Warren	No Hospital		Ralls	No Hospital		Perry	44
Central Missouri	29		Randolph	14		Reynolds	No Data
Audrain	42		Saline	41		Ripley	27
Boone	25		Schuyler	No Hospital		Scott	24
Callaway	22		Scotland	85		Shannon	No Hospital
Camden	33		Shelby	No Hospital		St. Francois	20
Cole	29		Sullivan	76		Ste. Genevieve	47
Cooper	26		**Northwestern Missouri**	24		Stoddard	52
Crawford	25		Andrew	No Hospital		Texas	53
Dent	21		Atchison	19		Wayne	No Hospital
Gasconade	83		Buchanan	24		Wright	No Hospital
Howard	No Hospital		Caldwell	No Hospital		**Southwestern Missouri**	26
Laclede	11		Carroll	31		Barry	46
Maries	No Hospital		Daviess	No Hospital		Barton	33
Miller	No Hospital		De Kalb	No Hospital		Bates	17
Moniteau	No Hospital		Gentry	29		Benton	No Hospital
Montgomery	No Hospital		Harrison	32		Cedar	42
Morgan	No Hospital		Holt	No Hospital		Christian	No Hospital
Osage	No Hospital		Johnson	19		Dade	No Hospital
Pettis	13		Nodaway	25		Dallas	No Hospital
Phelps	16		Worth	No Hospital		Greene	24
Pulaski	Army Hosp.					Henry	8
Washington	84					Hickory	No Hospital
						Jasper	13
						Lawrence	53
						McDonald	No Hospital
						Newton	30
Missouri	**19**					Polk	49
						St. Clair	5
						Stone	No Hospital
						Taney	69
						Vernon	18
Source: Missouri Department of Health and Senior Services, 2002						Webster	No Hospital

Community Access Program Grant

The Community Access Program (CAP) grant indicator shows the presence or absence of a CAP grant from the Health Resources and Services Administration (HRSA). The CAP grants build on existing models of service integration to help health care providers develop integrated, community-wide systems that serve the uninsured and underinsured. Health Resources and Services Administration data are only available at the MSA level since the "service area" of many CAP programs evolves over time and often includes multiple counties.

Two CAP grants were awarded in Missouri. The Kansas City Care Network Metropolitan Community Health Services received $864,475 in funding in March 2001. In September 2001, Kirksville College of Osteopathic Medicine received a CAP grant for $968,959.

Relationship of Safety Net Structure to Safety Net Performance and Population Outcomes

Documenting the impact of the safety net structure on outcomes for vulnerable populations is complicated because of the numerous factors that can influence outcomes. It is equally difficult to link specific aspects of the safety net structure to outcomes.

Some simple bivariate analyses have been conducted by AHRQ to examine whether individual measures have an association with outcomes. Findings from these analyses indicated that the type of hospital ownership status in a community had little or no association with most patient outcome measures. It did show that higher levels of privately owned hospitals in a community associated with a higher level of "no usual source of care" or "no physicians visit in the past year". These data do not indicate a causal link between access problems and high levels of private hospitals, however, they do indicate that in communities where there are a large number of for-profit-hospitals, problems accessing care is likely to be higher. Teaching hospitals were associated with higher levels of preventable hospitalizations and worse birth outcomes. It is likely that these data reflect the fact that teaching hospitals serve a more vulnerable population with greater access problems and generally located in urbanized and central city areas.[15]

[15] Book I, Page 12, Chapter 3, Billings Weinick (2003).

Safety Net Structure – Concentration and Distribution of Inpatient Uncompensated Care and Medicaid Discharges

Uncompensated and Medicaid Discharges are measured through four indicators:

- Market Concentration
- Cost Shifting Index
- Gini Coefficient
- Percent Discharges in High-Burden Hospitals

Data on these indicators were provided/available for only 17 counties and the state level.

Market Concentration

Market Concentration indicates the extent to which the market share of uncompensated care and Medicaid patients is concentrated in a small number of hospitals, with a higher value indicating greater concentration (Herfindahl Index). For the state of Missouri the value of this indicator was 0.15. Missouri ranked 9th in the nation (limited to the 31 states for which AHRQ provided data). North Carolina was at the top with a market concentration index for the uncompensated and Medicaid discharges of 0.56, and the District of Columbia was at the bottom with a market concentration index of 0.07 (Table 3.4)

Cost Shifting Index

Cost Shifting Index is the percent on average that an area hospital must raise charges to commercial patients to make up for the revenue lost through the provision of uncompensated care (percent on average that area hospitals must raise commercial charges to "cost shift" uncompensated care). For the state of Missouri, the value of this indicator was 0.16 and ranked 24th in the nation. Georgia had the highest Cost Shifting Index of 0.23 for uncompensated and Medicaid discharges. North Carolina ranked the lowest with a Cost Shifting Index of 0.01 (Table 3.4).

The uninsured are the concern of everyone because the cost of their health care is being borne by the increase in health care cost to everyone else. The construction of the cost-shifting index is an attempt to capture the increase in the health care cost due to the provision of health care to the uninsured. Due to the absence of hospitals in 44 counties in Missouri, the Cost Shifting Index was not available for all the counties in Missouri.

Cost Shifting Indices were available for 18 counties in Missouri. The data available indicated a Cost Shifting Index greater than the state level index of 0.16 for seven out of the 10 counties in the two southern regions. All eight counties in the regions of Kansas City, St. Louis, and Central, had a Cost Shifting Index lower than the state level (Table 3.5).

Table 3.4: Uncompensated and Medicaid Discharges, 1999				
State	**Market Concentration**	**Cost Shifting Index**	**Gini Coefficient**	**% Discharges in High-Burden Hospitals**
Arizona	0.11	0.12	0.32	16.2
Arkansas	0.25	n/a	0.22	0.0
California	0.09	0.09	0.40	14.4
Colorado	0.21	0.11	0.29	6.5
Connecticut	0.09	0.05	0.19	1.5
District of Columbia	0.07	0.16	0.42	21.5
Florida	0.19	0.18	0.32	23.3
Georgia	0.39	0.23	0.28	32.4
Hawaii	0.27	0.06	0.45	1.9
Illinois	0.08	0.12	0.32	11.0
Iowa	0.32	0.12	0.18	9.8
Kansas	0.20	0.15	0.12	8.4
Maine	0.26	0.15	0.20	8.5
Maryland	0.18	0.10	0.23	2.7
Massachusetts	0.19	0.06	0.28	1.4
Michigan	n/a	n/a	n/a	n/a
Minnesota	n/a	n/a	n/a	n/a
Missouri	**0.15**	**0.16**	**0.26**	**21.1**
Nevada	0.31	0.09	0.37	6.5
New Jersey	0.14	0.19	0.28	23.9
New York	0.10	0.21	0.30	22.8
North Carolina	0.56	0.01	0.18	0.0
Oregon	0.23	0.10	0.23	10.7
Pennsylvania	0.20	0.07	0.34	2.6
Rhode Island	0.16	0.09	0.13	0.0
South Carolina	0.39	0.16	0.15	21.2
Tennessee	0.18	0.08	0.21	7.4
Utah	0.20	0.05	0.31	0.5
Virginia	0.43	0.11	0.15	10.4
Washington	0.18	0.10	0.24	7.1
Wisconsin	0.14	0.09	0.32	4.8

Rank of Missouri	**9th**	**24th**	**14th**	**23rd**
Maximum	**NC (0.56)**	**Georgia (0.23)**	**Hawaii (0.45)**	**Georgia (32.4)**
Minimum	**D.C. (0.07)**	**NC (0.01)**	**Kansas (0.12)**	**Rhode Island (0.00)**

Source: Monitoring the Health Care Safety Net Book II, Patient Discharge Data – 1999 Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality and other sources

Table 3.5: Concentration and Distribution of Inpatient Uncompensated Care and Medicaid Discharges, 1999		
County and BRFSS Regions	**Cost Shifting Index**	**% Discharges in High Burden Hospitals**
Missouri	0.16	21.1
Kansas City Metro		
Cass County	0.11	0.0
Clay County	0.06	2.7
Jackson County	0.16	22.1
St. Louis Metro		
St. Charles County	0.07	0.0
St. Louis County	0.06	0.0
St. Louis City	0.16	18.5
Central Region		
Boone County	0.10	0.0
Cole County	0.08	0.0
Southwestern Region		
Barry County	0.21	49.1
Greene County	0.22	49.5
Jasper County	0.28	100.0
Lawrence County	0.34	100.0
Newton County	0.09	0.0
St. Clair County	0.43	77.0
Southeastern Region		
Butler County	0.29	100.0
Cape Girardeau County	0.12	0.0
Howell County	0.31	100.0
St. Francois County	0.16	55.1

Source: Monitoring the Health Care Safety Net Book II, Patient Discharge Data – 1999 Healthcare Cost and Utilization Project (HCUP). Agency for Healthcare Research and Quality and other Sources.

Gini Coefficient

The Gini Coefficient is the percent of area patients who would have to change hospitals to equalize uncompensated care and Medicaid discharges across all area hospitals. For the state of Missouri the value of this indicator is 0.26, which implies that 26% of area patients in the state of Missouri would have to change hospitals to equalize uncompensated care and Medicaid discharges across all area hospitals. Missouri ranked 14th in the nation with Hawaii at the top with a Gini Coefficient for the uncompensated and Medicaid discharges of 0.45 and Kansas at the bottom with a Gini Coefficient of 0.12 (Table 3.4).

Percent Discharges in High-Burden Hospitals

Percent Discharges in High-Burden Hospitals is based on the percent of patients in hospitals with a Cost Shifting Index greater than or equal to 0.25. For the state of Missouri, the value of this indicator was 21.1. Missouri ranked 23rd in the nation with Georgia at the top with the Percent Discharges in High-Burden Hospitals for the uncompensated and Medicaid discharges of 32.4 and Rhode Island at the bottom with 0.00 (Table 3.5).

In the southern region counties of Jasper, Lawrence, Butler, and Howell all Medicaid and uncompensated care patients went to high burden hospitals (hospitals that would need to raise commercial charges 25% or greater to make up for the lost revenue from uncompensated care). This is also referred to as 100% uncompensated discharges (Table 3.5).[16]

Relationship of the Safety Net Structure and the Concentration and Distribution of Inpatient Uncompensated Care and Medicaid Discharges on Population Outcomes

Price competitiveness of the local market and the hospital's payer mix impacts the ability of a safety net hospital to respond to market pressures. For example, it is difficult for a hospital to shift costs of nonpaying patients by raising charges if it has a high level of uncompensated care and a small private/commercial payer base. The Cost Shifting Index provides a measure of the average by which the hospital must raise charges to private/commercial patients in order to make up for the lost revenue by providing uncompensated care. As shown in Table 3.5 seven counties had a Cost Shifting Index higher than state average. The hospitals with large uncompensated care patient loads and a small/narrow private/commercial payer base and in community/county with high cost-shifting index, may be at greater financial risk as it may be difficult for them to "shift" in a competitive health care market.[17]

Simple bivariate analyses examining individual safety net measures and their association with outcomes showed that "greater levels of uncompensated care (as reflected by the cost-shifting index) and an increasing concentration of discharges in high-burden hospitals (those with a cost-shifting index greater than or equal to 0.25) are slightly to moderately associated with higher levels of preventable hospitalizations and worse birth outcomes."[18]

[16] If the value for "the percent of Medicaid and uncompensated care patients that go to high burden hospitals" is 100%, it means that all Medicaid and uncompensated care patients are going to high burden hospitals (hospitals that would need to raise commercial charges 25% or greater to make up for the lost revenue from uncompensated care).
[17] Book I, Chapter 5, Billings and Weinick (2003).
[18] See footnote 17.

Health Care Delivery System

The health care delivery system is measured by looking at the Healthcare Maintenance Organization (HMO) related indicators, physician supply and emergency room utilization. These indicators include:

- Healthcare Maintenance Organization Competition Index
- Healthcare Maintenance Organization Penetration
- Medicare Managed Care Penetration
- Physician Supply in Missouri
- Emergency Room (ER) Visits

Healthcare Maintenance Organization Competition Index

The HMO enrollment data by counties in Missouri was received from the Missouri Department of Insurance. The information included the enrollments for: HMO only, Point of Services (POS), Medicare, and Medicaid. This county level information was for the HMOs operating in Missouri for the years 2002 and 2003.

The percent share (the percent of total enrollments) of each HMO was calculated in order to compute the Herfindahl Index of Concentration. This index was calculated for: each county, the seven regions, and Missouri. Based on this information an additional column "HMO Market Concentration Status for 2003" was also created. This new column is based on the value of Herfindahl Index and labels the HMO market in the area as "Moderately Concentrated," "Concentrated" or "Not Concentrated."

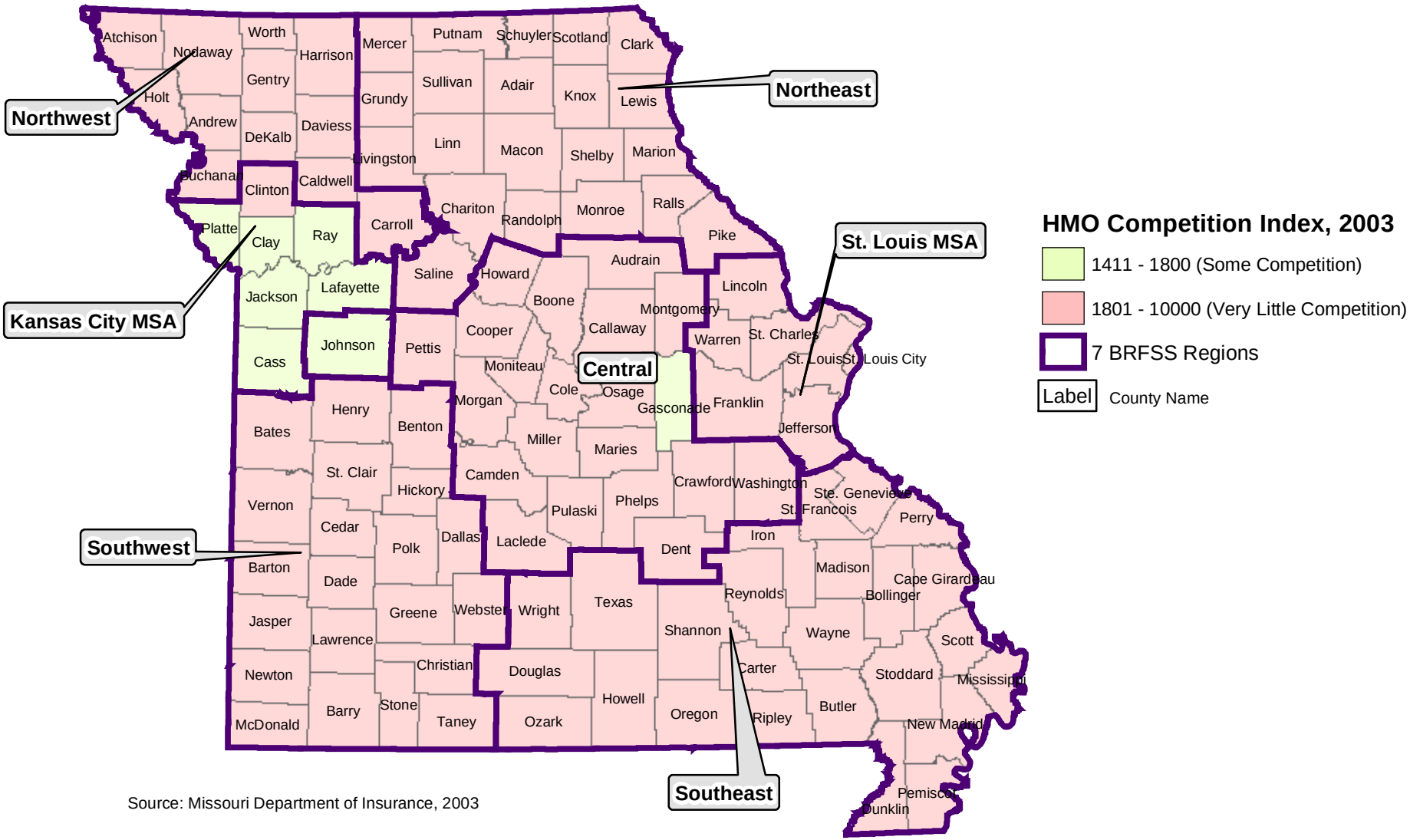
The 2003 HMO data suggested that in Missouri, with the exception of Kansas City MSA, and Johnson and Gasconade counties, the remaining counties have concentrated HMO markets. In other words, HMO market is non-competitive in the rest of the regions and counties of Missouri. The HMO market in the Kansas City MSA, and Johnson and Gasconade counties is moderately concentrated (have some degree of competition). Map 3.2 portrays the HMO competition index for each county.

Healthcare Maintenance Organization Penetration

Healthcare Maintenance Organization penetration shows the percent of area (county, region or state) population enrolled with HMOs. The total HMO enrollment and the total population (2003) for each area were used for this purpose. It is important to note that in areas where the HMO has a large penetration, the organization can exert pressure on the providers to keep charges lower. The lower charges might be able to improve access to lower cost plans and reduced premiums for conventional insurance products. Lower cost plans can influence insurance uptake, which then reduces the burden on the safety net.

The data from 2003 suggested that about 22% of Missouri's total population were enrolled with HMOs (Table 3.6). In about 22 counties, less than 1% of the population was enrolled with HMOs. These counties are located in the northeastern and southeastern regions. Higher enrollment rates of 15.0% to 38.3% were observed along Interstate-70 and parts of the southwestern region (Map 3.3).

Map 3.2: Health Maintenance Organizations Competition Index by Missouri Counties, 2003

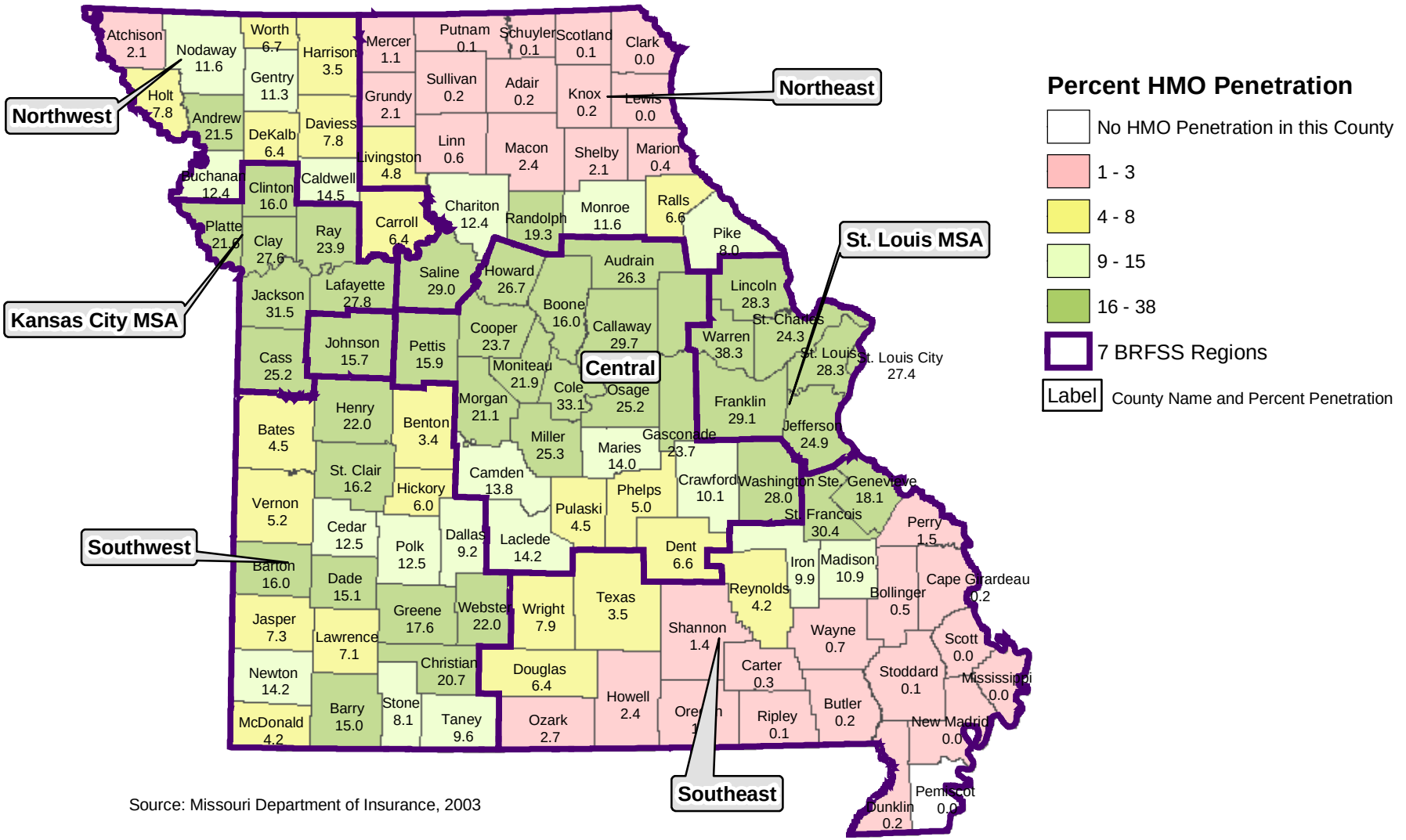


Source: Missouri Department of Insurance, 2003

Table 3.6: Health Care Delivery System, 2003				
BRFSS Regions	**HMO Competition Index**	**HMO Market Concentration Status**	**HMO Penetration (%)**	**Medicare Managed Care Penetration %**
Missouri	1003	Moderately Concentrated	21.5	10.9
Kansas City Metro	1349	Moderately Concentrated	29.0	13.8
	7/7(100)	6/7(86)	6/7(86)	2/7(29)
St. Louis Metro	1964	Concentrated	29.0	21.2
	7/7(100)	0/7(0)	7/7(100)	6/7(86)
Central Region	1802	Concentrated	18.9	1.2
	21/21(100)	1/21(5)	11/21(52)	1/21(5)
Southwestern Region	3244	Concentrated	13.5	8.3
	21/21(100)	0/21(0)	2/21(10)	4/21(19)
Southeastern Region	1926	Concentrated	5.2	0.1
	25/25(100)	0/25(0)	1/25(4)	0/25(0)
Northwestern Region	3111	Concentrated	12.2	0.0
	13/13(100)	1/13(8)	1/13(8)	0/13(0)
Northeastern Region	2228	Concentrated	6.9	0.0
	21/21(100)	0/21(0)	1/21(5)	0/21(0)

Source: Missouri Department of Insurance, 2003
Note: Shaded statistics show the proportion and the percent of counties in the region with rate greater than State level

Map 3.3: Health Maintenance Organization Penetration by Missouri Counties, 2003



Source: Missouri Department of Insurance, 2003

Medicare Managed Care Penetration

Medicare Managed Care Penetration was calculated by dividing the number of Medicare Managed Care enrollees by the number of Medicare beneficiaries in Missouri for each area of Missouri.

The data suggested that only 11% of Medicare beneficiaries were using HMO managed care in the state of Missouri. St. Louis MSA had the highest rate at 21% and the northeastern region had the lowest enrollment rate at 0.01% (Table 3.6).

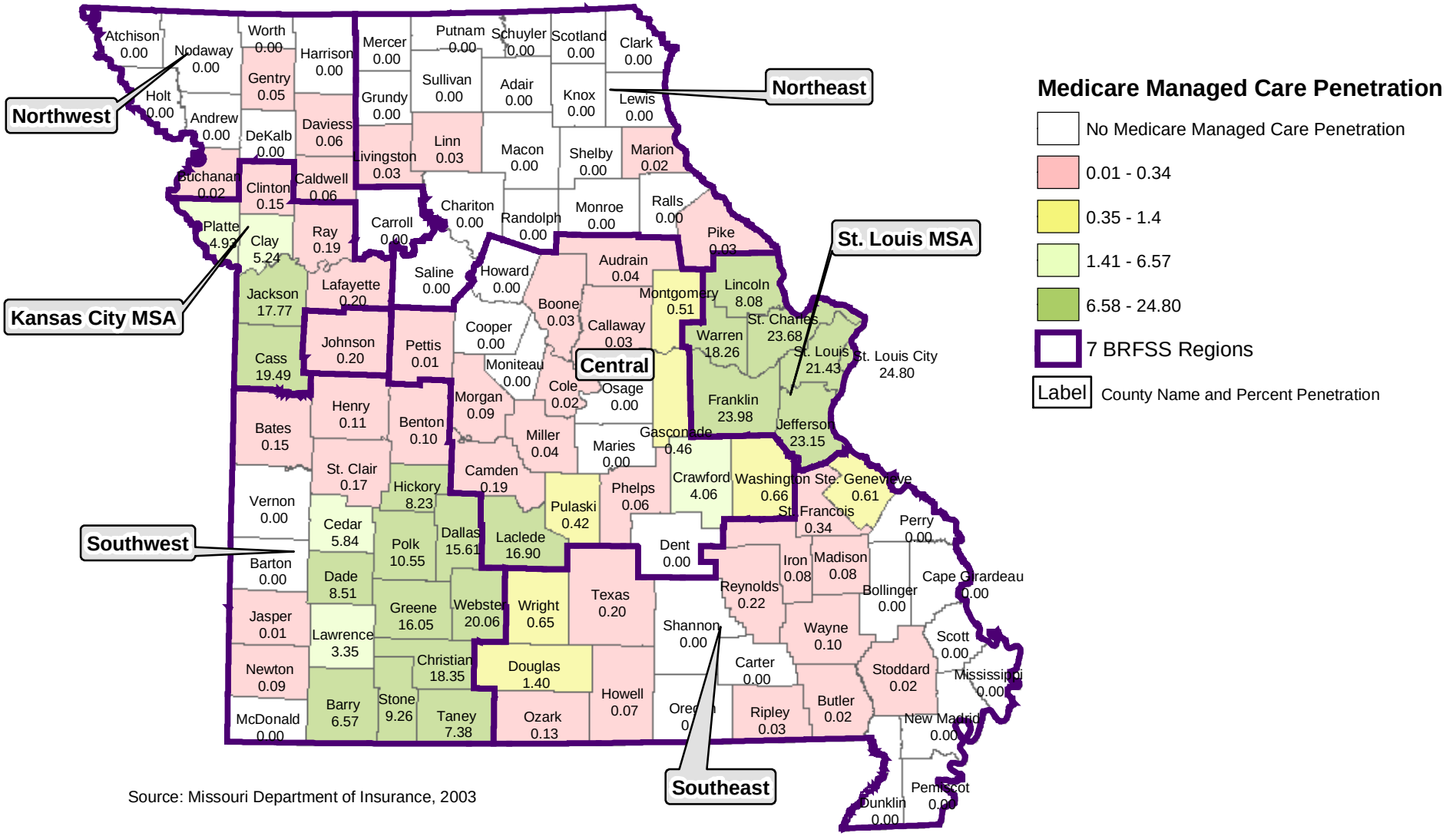
Interestingly, no one was enrolled in a Medicare Managed Care in 44 of the 115 counties in Missouri. All the counties in the Kansas City and St. Louis MSA had Medicare Managed Care enrollments. In the central region, 16 out of 21 counties were using Medicare Managed Care. The proportion of counties with Medicare Managed Care to the total counties in the region was 18 out of 21, 14 out of 25, 5 out of 13, and 4 out of 21 counties, in the southwestern, southeastern, northwestern, and northeastern regions, respectively. Data suggested that across Missouri there are three clusters where Medicare Managed Care had penetrated with enrollment -the counties around St. Louis City, Kansas City, and Springfield. The rest of the state was either not using Medicare Managed Care or it was not being offered (Map 3.4).

Additional Data/Information Gathered

Based on HMO data received from the Missouri Department of Insurance, there were 21 HMOs operating in Missouri during the year 2002 and 19 in 2003 (Table 3.7). In order to rank the HMOs, two more tables were created. The first table ranks them by the number enrolled and the second by the number of counties the organization operates in (Table 3.8-3.9).

Appendix 3(a) contains additional maps portraying the number of HMOs by county and the HMO enrollment by county. As indicated by the maps, two counties - Clark and Pemiscot - have only one person each enrolled with a HMO. Ten counties each in the northeastern and southeastern regions had less than 100 persons enrolled with HMOs.

Map 3.4: Percent of Medicare Managed Care Penetration by Missouri Counties, 2003



Source: Missouri Department of Insurance, 2003

Table 3.7: Health Maintenance Organizations in Missouri, 2002-03	
List of HMOs Operating in Missouri in 2002	**List of HMOs Operating in Missouri in 2003**
Aetna Health, Inc.	Aetna Health, Inc.
The Alliance for Community Health Care, LLC dba Community Care	The Alliance for Community Health Care, LLC dba Community Care
Community Health Plan	Community Health Plan
CIGNA Healthcare of Ohio, Inc. dba CIGNA Healthcare of Kansas/Missouri, Inc.	CIGNA Healthcare of Ohio, Inc. dba CIGNA Healthcare of Kansas/Missouri, Inc.
CIGNA Healthcare of St. Louis, Inc.	CIGNA Healthcare of St. Louis, Inc.
Coventry Health Care of Kansas, Inc.	Coventry Health Care of Kansas, Inc.
Cox Health Systems HMO, Inc.	Cox Health Systems HMO, Inc.
First Guard Health Plan, Inc.	First Guard Health Plan, Inc.
Children's Mercy's Family Health Partners, Inc.	Children's Mercy's Family Health Partners, Inc.
Good Health HMO, Inc. dba Blue Care, Inc.	Good Health HMO, Inc. dba Blue Care, Inc.
Group Health Plan, Inc.	Group Health Plan, Inc.
	Great-West Healthcare of KS/MO, Inc.
Healthcare USA of Missouri, LLC	Healthcare USA of Missouri, LLC
Humana Health Plan, Inc.	Humana Health Plan, Inc.
Health Link HMO, Inc.	
HMO Missouri, Inc. dba Blue Choice	HMO Missouri, Inc. dba Blue Choice
Blue Cross & Blue Shield of Kansas City	Blue Cross & Blue Shield of Kansas City
The Medical Center Health Plan	
Missouri Care, LC	Missouri Care, LC
Mercy Health Plan of Missouri, Inc dba Premier Health Plans	Mercy Health Plan of Missouri, Inc dba Premier Health Plans
One Health Plan of Kansas/Missouri, Inc.	
United Healthcare of the Midwest, Inc.	United Healthcare of the Midwest, Inc.
Number of HMOs in 2002: 21	**Number of HMOs in 2003: 19**

Source: Missouri Department of Insurance, 2002-03

Table 3.8: HMO Ranking in Missouri by Enrollment, 2003

List Of Healthcare Maintenance Organizations	Number of Counties	Number Enrolled
Healthcare USA of Missouri, LLC	85	188,814
Mercy Health Plan of Missouri, Inc dba Premier Health Plans	96	185,682
United Healthcare of the Midwest, Inc.	106	172,880
Group Health Plan, Inc.	80	149,788
HMO Missouri, Inc. dba Blue Choice	86	93,519
Blue Cross & Blue Shield of Kansas City	59	67,556
Coventry Health Care of Kansas, Inc.	69	61,562
Children's Mercy's Family Health Partners, Inc.	35	49,208
The Alliance for Community Health Care, LLC dba Community Care	25	46,652
First Guard Health Plan, Inc.	45	42,486
Humana Health Plan, Inc.	50	39,285
Good Health HMO, Inc. dba Blue Care, Inc.	48	35,157
Missouri Care, LC	79	33,285
Community Health Plan	31	18,122
Aetna Health, Inc.	38	15,818
Cox Health Systems HMO, Inc.	36	14,469
CIGNA Healthcare of St. Louis, Inc.	23	5,854
CIGNA Healthcare of Ohio, Inc. dba CIGNA Healthcare of Kansas/Missouri, Inc.	35	4,561
Great-West Healthcare of KS/MO, Inc.	10	1,128
Total in Missouri 19		1,225,826

Source: Missouri Department of Insurance, 2003

Table 3.9: HMO Ranking in Missouri by the Counties Served, 2003		
List Of Healthcare Maintenance Organizations	**Number of Counties**	**Number Enrolled**
United Healthcare of the Midwest, Inc.	106	172,880
Mercy Health Plan of Missouri, Inc dba Premier Health Plans	96	185,682
HMO Missouri, Inc. dba Blue Choice	86	93,519
Healthcare USA of Missouri, LLC	85	188,814
Group Health Plan, Inc.	80	149,788
Missouri Care, LC	79	33,285
Coventry Health Care of Kansas, Inc.	69	61,562
Blue Cross & Blue Shield of Kansas City	59	67,556
Humana Health Plan, Inc.	50	39,285
Good Health HMO, Inc. dba Blue Care, Inc.	48	35,157
First Guard Health Plan, Inc.	45	42,486
Aetna Health, Inc.	38	15,818
Cox Health Systems HMO, Inc.	36	14,469
Children's Mercy's Family Health Partners, Inc.	35	49,208
CIGNA Healthcare of Ohio, Inc. dba CIGNA Healthcare of Kansas/Missouri, Inc.	35	4,561
Community Health Plan	31	18,122
The Alliance for Community Health Care, LLC dba Community Care	25	46,652
CIGNA Healthcare of St. Louis, Inc.	23	5,854
Great-West Healthcare of KS/MO, Inc.	10	1,128
Total in Missouri 19		**1,225,826**

Source: Missouri Department of Insurance, 2003

GIS Mapping of Individual HMOs

A GIS map indicating the number enrolled in each county was prepared for each of the 19 HMOs operating in 2003. Based on this presentation of the data, it is apparent that almost all the HMOs operating in Missouri were working in selected portions of the state. Some operated exclusively in the urban or urban adjacent counties. Some had greater enrollment in the eastern and some in the western part of Missouri. Less than five HMOs were operating in the 17 counties located in the northeastern, southeastern and the northwestern regions of the Missouri. Appendix 3(b) contains the maps portraying the presence of each HMO by county.

Physician Supply in Missouri

The measure for physician supply per 100,000 population was based on the following seven physician categories: Primary Pediatricians, OB/GYN, General Internists, General Primary Care, Pediatric Specialty, Medical Specialty, and Surgical Specialty (Table 3.10). Regional summary statistics for each physician category are presented in Table 3.11.

Table 3.10: Categories of Physician Supply

Number	Physician Category	Specialty Code/s	Denominator
1-	Primary Pediatrics	038 Pediatric	Number of Individuals Ages 0–17
2-	OB/GYN	015 Gynecology, 029 Obstetrics, 030 Obstetrics and Gynecology	Total Number of Women Age 15 And Older
3-	General Internist	019 Internal Medicine	Number of Individuals Age 18 And Older
4-	General Primary Care	010 Family Practice, 087 General Practice	Total Population
5-	Pediatric Specialty	039 Pediatric Allergy, 040 Pediatric Cardiology, 051 Pediatric Radiology, 064 Surgery Pediatric, 096 Pediatric Endocrinology, 097 Pediatric Pulmonology, 099 Pediatric Hematology/Oncology, 100 Pediatric Nephrology	Number of Individuals Ages 0–17
6-	Medical Specialty	002 Allergy, 005 Cardiovascular Diseases, 006 Dermatology, 011 Gastroenterology, 048 Pulmonary Disease, 074 Allergy Immunology	Total Population
7-	Surgical Specialty	032 Ophthalmology, 055 Surgery Plastic and Reconst., 056 surgery Abdominal, 057 Surgery Cardiovascular, 058 Surgery Colon and Rectal, 059 Surgery General, 060 Surgery Hand, 061 Head and Neck, 062 Surgery Neurological, 063 Surgery Orthopedic, 065 Surgery Plastic, 066 Surgery Thoracic, 067 Surgery Traumatic, 068 Surgery Urological, 084 Surgery Facial Plastic, 105 Surgery Vascular, 109 Surgery General Vascular, 113 Surgery Obstetrics/GYN, 114 Surgery Oro-Facial Plastic, 115 Surgery Otorhinolaryngology and Oro-Fac Plastic, 124 Surgery Thoracic Cardiovascular, 125 Urology	Total Population

Source: CHIME, Missouri Department of Health and Senior Services, 2004
Note: The denominators (population for different age groups) are based on 2003 estimates of population, Population Division, U.S. Census Bureau

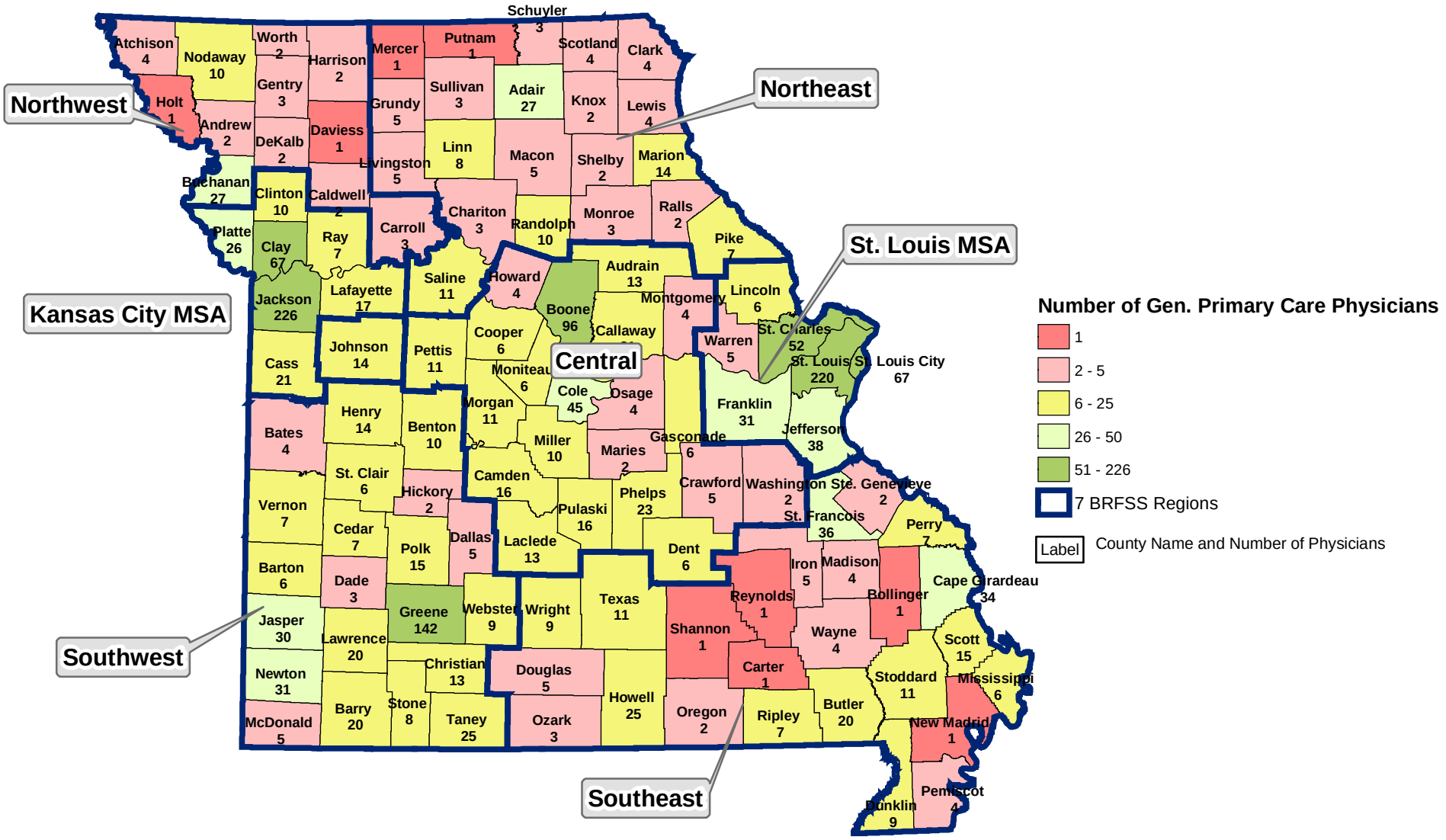
Table 3.11: Physician Supply in Missouri by Regions, 2004

	Physician Type	Missouri	Kansas City Metro	St. Louis Metro	Central Region	Southwestern Region	Southeastern Region	Northeastern Region	Northwestern Region
Number	Primary Pediatrics	1048	272	550	87	67	43	17	12
	OB/GYN	648	125	319	67	71	38	14	14
	General Internists	2329	373	1323	216	197	135	38	47
	General Primary Care	1916	374	419	320	382	224	73	124
	Pediatric Specialty	79	34	35	5	5	0	0	0
	Medical Specialty	747	181	390	51	76	26	14	9
	Surgical Specialty	1927	366	906	210	232	124	45	44
	Total Physicians*	24267	2715	6244	1468	1583	840	302	339
	Full Time Physicians	22076	2243	4971	1192	1364	726	263	279
Rate per 100,000	Primary Pediatrics	74.5	96.5	106.8	54.5	33.3	32	30.3	20.4
	OB/GYN	27.5	27.8	37.7	24.4	20.3	16.4	14.2	13.2
	General Internists	54.2	45.6	87.2	41.7	30.8	32	20.3	24.1
	General Primary Care	33.6	34	20.6	47.2	45.4	40.3	30	48.8
	Pediatric Specialty	5.6	12.1	6.8	3.1	2.5	0	0	0
	Medical Specialty	13.1	16.5	19.2	7.5	9	4.7	5.8	3.5
	Surgical Specialty	33.8	33.3	44.6	31	27.6	22.3	18.5	17.3
	Total Physicians*	235.4	247	307.3	216.7	188	151	124.2	133.4
	Full Time Physicians	193.5	204.1	244.7	175.9	162	130.5	108.1	109.8

Sources: CHIME, Missouri Department of Health and Senior Services, 2004
*This is the sum of all Physicians. The 7 Physicians groups listed does not exhaust all the physician categories

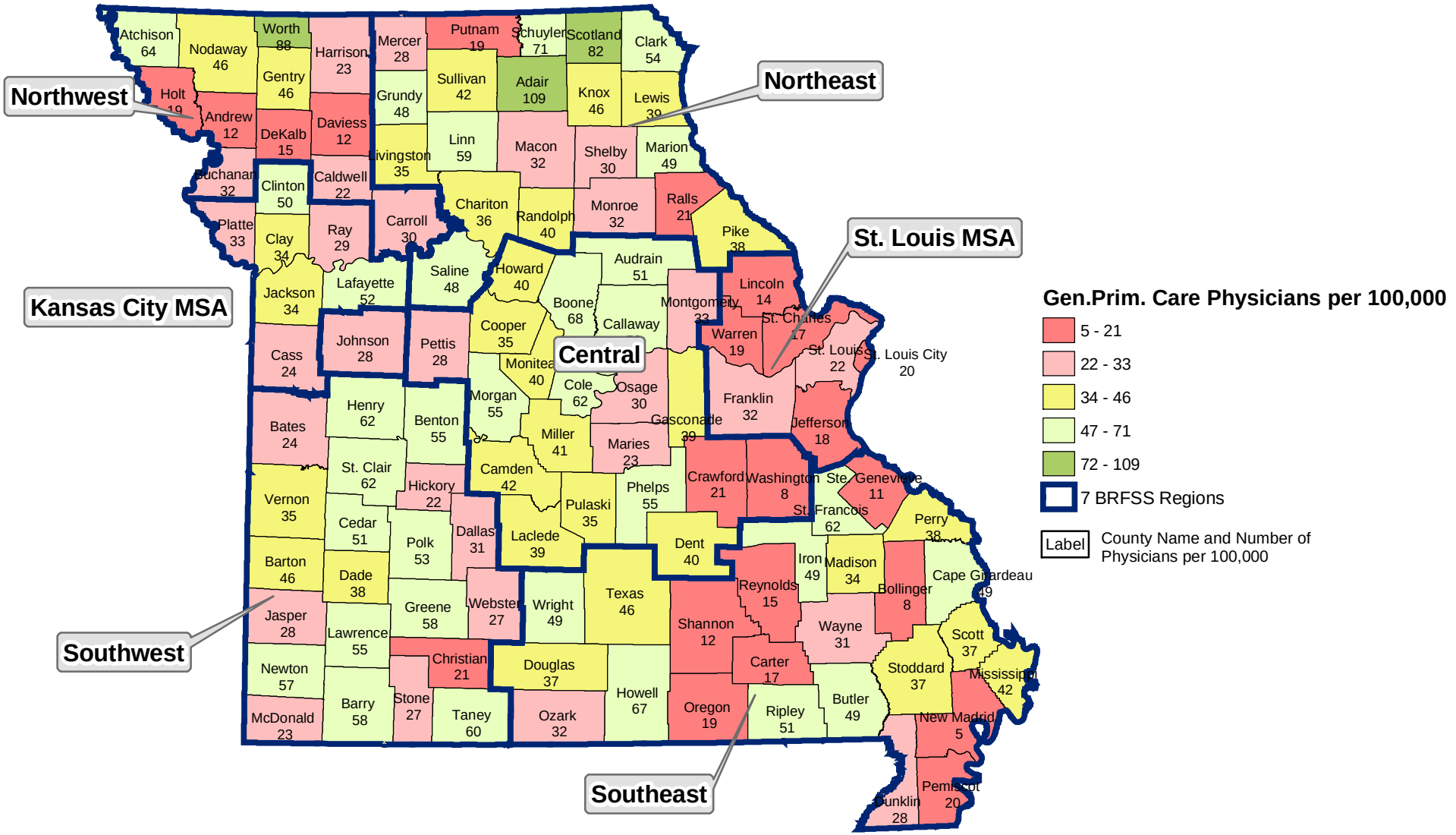
County level GIS maps for these seven categories of physicians are presented in two ways: by the number of physicians in a county by physician category, and by rate per 100,000 residents of the county. Map 3.5 and Map 3.6 portrays the number of, and rate per 100,000 residents respectively, for general primary care physicians. Appendix 3(c) contains maps portraying the number of and rate per 100,000 residents for the other six physician categories included in this report.

Map 3.5: Number of General Primary Care Physicians by Missouri Counties, 2004



Source: Center for Health Information Mangement and Evaluation
Missouri Department of Health and Senior Services

Map 3.6: General Primary Care Physicians: Rate per 100,000 by Missouri Counties, 2004



Source: Center for Health Information Mangement and Evaluation
Missouri Department of Health and Senior Services

As demonstrated in the graphic representation of physician supply in Missouri (Maps 3.4 and 3.5 and Appendix 3(c)), the availability of physicians differs greatly across counties and regions.

Table 3.12 contains the counties that had the lowest rate of total physicians per 100,000 residents and general primary care physician per 100,000 residents.

Table 3.12: Physician Supply per 100,000 of Missouri Residents for the Bottom 20% Counties with Lowest Physicians to Residents Ratio

County Name	Rate per 100,000	County Name	Rate per 100,000
Bollinger	8.12	New Madrid	5.21
Shannon	12.06	Bollinger	8.12
Daviess	12.49	Washington	8.37
Carter	16.74	Ste. Genevieve	11.05
Andrew	17.84	Andrew	11.90
Ralls	20.72	Shannon	12.06
DeKalb	22.97	Daviess	12.49
McDonald	27.31	Lincoln	13.57
Mercer	27.81	Reynolds	15.20
Oregon	29.12	DeKalb	15.31
Shelby	29.84	St. Charles	16.69
Christian	30.86	Carter	16.74
Dallas	31.03	Jefferson	18.38
New Madrid	31.27	Warren	18.61
Ozark	31.59	Oregon	19.42
Monroe	31.93	Putnam	19.43
Webster	33.21	Holt	19.44
Hickory	33.31	St. Louis City	20.17
Warren	33.5	Pemiscot	20.27
Lincoln	33.93	Ralls	20.72
Maries	33.93	Christian	21.11
Chariton	36.36	Crawford	21.26
Douglas	37.42	St. Louis	21.72

Sources: CHIME, Missouri Department of Health and Senior Services, 2004

Sixty-six counties (57%) had no primary pediatric physician and 74 counties (64%) had no OB/GYN physicians.

Work Status of Physicians in Missouri

County level GIS maps and Excel tables about the Work Status of Physicians were also prepared. These include In-Training, Full-Time, and Part-Time physicians. Any physician working less than 31 hours per week was considered part time Appendix 3(d).

Relationship of Physician Supply on Population Outcomes

As with the safety net structure, physician supply was found to have little association with rates of preventable/avoidable admissions or birth outcomes. Nevertheless, higher levels of physician supply were associated with lower levels of barriers to care.[19]

Based on data from Missouri Department of Insurance three variables indicating HMO penetration and pesence in each county of Missouri, and data from CHIME, Missouri Department of Health and Senior Services, showing the supply of physicians for the basic health care needs of county population has been used to rank the counties. Table 3.13 shows the individual and composite ranking of top 20% counties where Health care delivery system and structure is in need of attention. Complete ranking is at Appendix 3(e).

Table 3.13: Ranking: Health System and Safety Net Structure
(Counties By Composite and Individual Ranks)

	County Name	HMO Penetration %	Medicare Managed Care Penetration %	HMO Competition Index	OB/GYN per 100,000	Internists per 100,000	Primary Pediatrics per 100,000	General Primary Care Physicians per 100,000	Composite Health Care Delivery System
1	Shannon	91	115	106	115	115	115	110	767
2	Putnam	109	115	93	115	115	115	100	762
3	Mercer	93	115	99	115	115	115	81	733
4	Bollinger	96	115	57	115	115	115	114	727
5	McDonald	80	115	96	115	115	115	88	724
6	Carter	98	115	50	115	115	115	104	712
7	Clark	115	115	114	115	115	115	21	710
8	Lewis	115	115	76	115	115	115	49	700
9	Oregon	92	115	100	115	62	115	101	700
10	Andrew	29	115	90	115	115	115	111	690
11	DeKalb	72	115	95	115	70	115	106	688
12	Mississippi	115	115	63	115	115	115	43	681
13	New Madrid	115	115	77	115	29	115	115	681
14	Knox	101	115	75	115	115	115	36	672
15	Ralls	69	115	46	115	115	115	96	671
16	Atchison	87	115	112	115	115	115	7	666
17	Schuyler	108	115	94	115	115	115	4	666
18	Daviess	63	52	91	115	115	115	109	660
19	Holt	64	115	98	115	34	115	99	640
20	Shelby	88	115	16	115	115	115	76	640
21	Worth	67	115	111	115	115	115	2	640
22	Maries	46	115	32	115	115	115	90	628
23	Scotland	105	115	59	115	115	115	3	627

Source: Computation of these ranks is based on data from CHIME, Missouri Department of Health and Senior Services and Missouri Department of Insurance

Note: The higher rank is assigned to the county/city where the value of these indicators is smaller with the exception of HMO Competition Index. The greater value of HMO Competition Index implies fewer HMOs operating in the county and leaving residents with fewer choices. Therefore, the higher the composite health care delivery system score indicates a poor health care delivery system and structure of health care safety net in that county.

[19] Book I, Chapter 5, Billings and Weinick (2003).

Emergency Room (ER) Visits

The emergency room visit data by pay source was broken down into Medicare, Medicaid, Other Government, Workers Compensation, Self pay/No Charge, Commercial, Other and Unknown. The data was collapsed into the following three broad categories:

1. Publicly Insured (Medicare, Medicaid and Other Government)
2. Privately Insured (Workers Compensation and Commercial)
3. Uninsured (Self pay/No Charge)

The data was then formatted in the following three ways:

- Number of ER visits in each county
- Proportion of each pay source
- Rate of ER visits per 1,000 residents

The counties were separated into seven regions and the statistics for these regional levels are presented in Table 3.14.

Contrary to common belief that the uninsured crowd the ER, the visits by persons listed as self pay/no charge reflected 13.1% of the total. At the state level, nearly 44% and 41% visits were by publicly insured and privately insured, respectively. The use of the ER by the publicly insured was greater in the two southern and the northeastern regions (more than 50% of all the ER visitors were publicly insured in these regions). In the two metro regions of Kansas City and St. Louis, a greater proportion of ER visitors were privately insured.

ER visit information was used to create GIS maps based on three perspectives: Number, Percent, and Rate per 1,000 population and are provided in Appendix 3(f) of this report.

The 2002 data on ER visits by pay source suggests that approximately about 33% Missourians visited the ER during 2002 with the assumption that no one visited more than once (Total Number of ER visitors as percent of Missouri's population). There is a fair chance that some visited the ER more than one time; therefore, if on average, every Missourian visited the ER twice, then 18% visited the ER during 2002. If each person visited ER three times during 2002, then 12% visited the ER.

Relationship of Emergency Room Visits and Population Outcomes

According to bivariate analyses conducted by AHRQ, emergency room visits were moderately associated with higher levels of preventable hospitalization and poor birth outcomes. Often, the emergency room is viewed as the "safety net for the safety net" and can play an important role in the performance of the health care delivery system for vulnerable and uninsured populations. High emergency room use may be indicative of an inability to obtain care elsewhere or dissatisfaction with the ambulatory care system in the community. Another association can be made with higher levels of ER use and lower levels of lacking a usual source of care and having no physician visit in the past year.[20]

[20] Book I, Chapter 5, Billings and Weinick (2003).

Table 3.14: Emergency Room Utilization by Pay Source, 2002											
BRFSS Regions	Rate: Per 1,000 of the Residents				Number of Visits and Percent by Pay Source						
	All Pay Sources	Public Insurance	Private Insured	Uninsured (Self pay/No Charge)	All Pay Sources	Uninsured (Self pay/No Charge)		Private Insured		Public Insurance	
					Number	Number	%	Number	%	Number	%
Missouri	348	152	142	46	1,972,288	259,137	13.1	862,317	43.7	803,228	40.7
Kansas City Metro	352	122	173	54	385,253	59,349	15.4	133,543	34.7	189,351	49.1
St. Louis Metro	315	125	149	35	639,552	70,837	11.1	253,301	39.6	301,833	47.2
Central Region	337	157	121	44	225,704	29,485	13.1	105,093	46.6	81,264	36.0
Southwestern Region	400	205	123	66	332,519	55,042	16.6	170,764	51.4	102,531	30.8
Southeastern Region	434	230	127	47	240,258	25,927	10.8	127,350	53.0	70,607	29.4
Northwestern Region	284	129	122	32	69,108	7,769	11.2	31,346	45.4	29,712	43.0
Northeastern Region	315	161	110	42	79,894	10,728	13.4	40,920	51.2	27,930	35.0

Source: Missouri Information for Community Assessment (MICA), Missouri Department of Health and Senior Services, 2002

4. Community Context

Background Information

The safety net is influenced by a wide variety of community characteristics in addition to those specifically related to the health care system. Population size and composition, the economy, living arrangements, and crime rates all influence the structure and functioning of communities and determine the context in which the safety net functions. A safety net in an area facing considerable population growth is likely to address different health care needs than one in a community facing declining population. [21]

Community Context is measured by looking at demographic related indicators and include:

- Population
  - County-level Population
  - Percent of Change in Population
- Race and Ethnicity
  - Population by Race
  - Percent Hispanic Population (any race)
- Indices of Racial and Economic Separation
  - Racial Dissimilarity Indices
  - Economic Indices
- Immigrant Population
  - Percent of Population Foreign Born
  - Foreign Born
  - Place of Foreign Birth
  - Percent of Population that Speak Non-English at Home
  - Percent of Population Speak English Less Than Very Well
- Economy
  - Percent Below Poverty
  - Median Household Income
  - Percent of Households with Incomes Under $15,000
  - Percent of Households with Incomes Over $75,000
  - Percent of Households Under $15,000 on Public Assistance
  - Mean Public Assistance Amount ($)
  - Percent of Population Ages 16+ Not in Labor Force
  - Percent of Population Ages 16+ Unemployed
- Living Arrangements, Housing, Education, and Crime
  - Living Arrangements
  - Housing
  - Education
  - Index Crimes

[21] Book I, Chapter 6, Billings and Weinick (2003).

Population

Population indicators are very useful in learning about the demographics and the population trends at the state, regional, and county level. The percent of change in population by different age groups can be examined to better understand the population growth pattern at the county level and the need or demand for a health care system, including the safety net. The population change in the county or the region may also be influenced by migration. Negative growth in a county or the region may be attributed to out migration indicating the lack of economic opportunities and/or poor quality of life including poor health care access.

The latest available county-level estimate for the year 2002 was used for this report. Population change rate was calculated for the last five years ending in 2002. Population density was calculated with 2002 population estimates. Regional statistics are presented in Table 4.1 and include total population, population density, and the percent of change in population from 1997 to 2002 for all ages, under age 18, ages 18-64, and age 65 and older. County-level data for total population and the change in total Missouri population by the three age groups are presented in Map 4.1, Map 4.2, and Appendix 4(a).

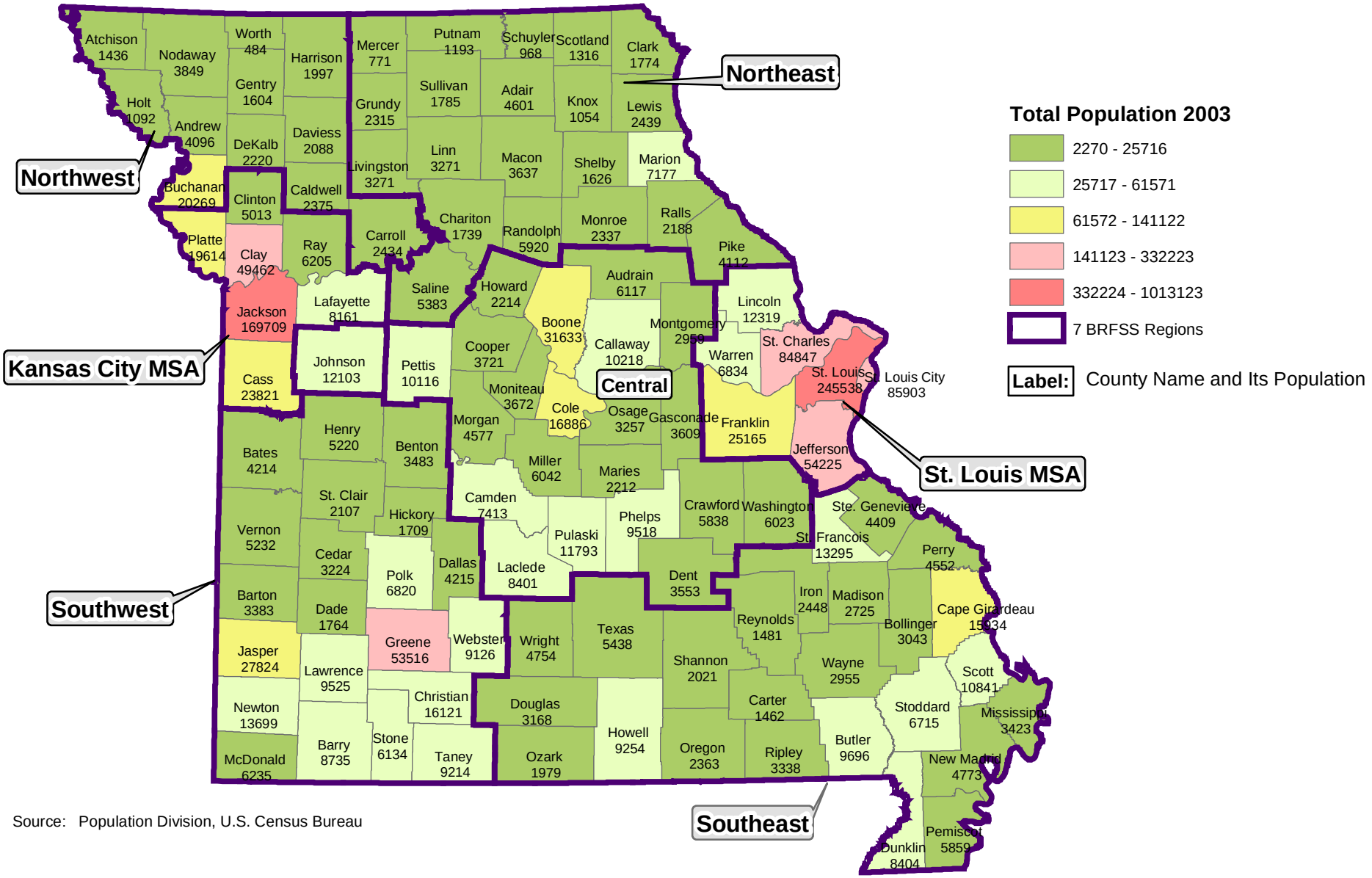
Table 4.1: Community Context – Population, 2002

BRFSS Regions	Total Population	Population Density	% Change in Population (1997-2002)			
			Total	U18	18 - 64	65+
Missouri	5,674,000	82	3.5	-2.0	6.6	0.5
Kansas City Metro	1,093,687	283	4.3	0.3	6.6	1.6
St. Louis Metro	2,027,786	529	2.5	-2.7	5.2	0.7
Central Region	670,251	51	5.5	-1.5	9.0	2.4
Southwestern Region	831,427	63	6.5	1.3	9.7	2.7
Southeastern Region	554,053	34	1.4	-6.0	5.6	-1.4
Northwestern Region	243,061	34	2.1	-5.3	6.5	-3.2
Northeastern Region	253,735	22	-0.3	-7.1	4.2	-5.4

Sources: U.S. Bureau of Census, Population Estimates for 2002

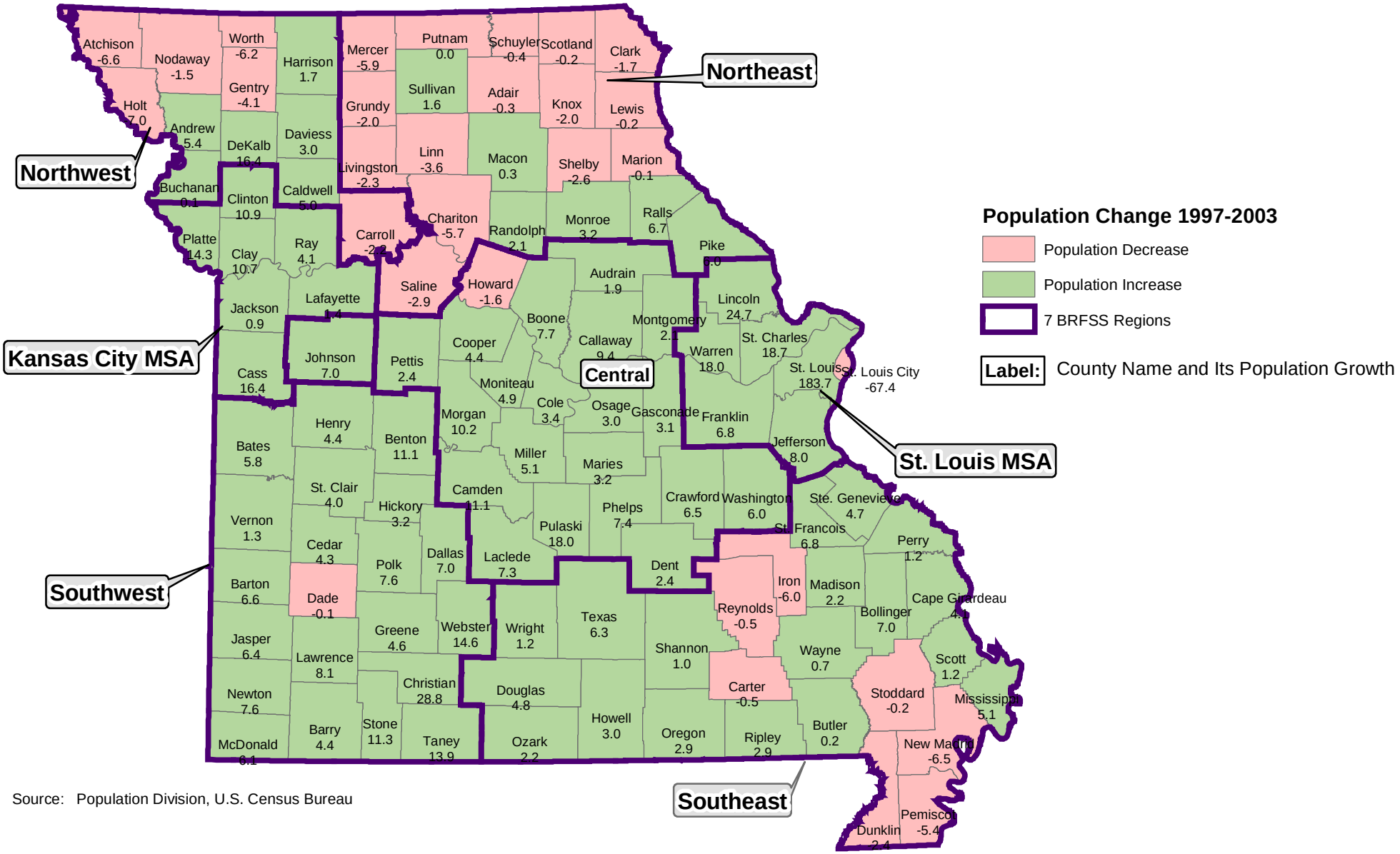
The data indicated a population growth at 3.5% between 1997-2002. According to the 2002 data, all of the regions showed a positive population growth except the northeastern region. Statewide, the highest growth was observed in the population group ages 18-64, and a decline of 2% was observed in the younger population (age 0-17). With the exception of Kansas City Metro and the southwestern region, the rest of the regions were attributed with negative population growth for those under age 18.

Map 4.1: Population by Missouri Counties, 2003



Source: Population Division, U.S. Census Bureau

Map 4.2: Population Change 1997-2003 by Missouri Counties, 2003



Source: Population Division, U.S. Census Bureau

Race and Ethnicity

Population by Race

The data source of county level population by race and ethnicity was the 2000 U.S. Census, which is also the latest data for this measure. Table 4.2 provides the summary by regions. The statistics suggested that White/Caucasian was the largest race representing 85% of the population, followed by the Black/African American race at 11%, and Hispanic and Asian races at 1.4% and 1.1%, respectively, of Missouri's total population. One and a half percent of Missouri's population was multiracial (Table 4.2). Appendix 4(b) portrays the population by the three major races: White, Black, and Hispanic. The highest concentration of Blacks is in St. Louis City, where Blacks were the majority (51%) followed by Whites (44%), and Hispanics (2%). Other counties with a high concentration of Black population (13% - 26%) were Jackson, St. Louis City, Pemiscot, New Madrid, and Mississippi counties.

Table 4.2: Community Context - Race/Ethnicity, 2000

BRFSS Regions	% Population							% Population Hispanic (Any Race)				
	Single Race						2+ Races	All Hispanic	Mexican	Puerto Rican	Cuban	Other
	White	Black	Asian	Native American	Hawaiian / Pacific Island	Other						
Missouri	84.9	11.2	1.1	0.4	0.1	0.8	1.5	2.1	1.4	0.1	0.1	0.6
Kansas City Metro	91.2	5.2	0.7	0.4	0.1	0.9	1.5	2.5	1.8	0.1	0.1	0.5
	6/7(86)	1/7(14)	3/7(43)	5/7(71)	3/7(43)	3/7(43)	3/7(43)	4/7(57)	4/7(57)	5/7(71)	3/7(43)	3/7(43)
St. Louis Metro	86.0	11.2	0.9	0.3	0.0	0.4	1.2	1.3	0.8	0.1	0.0	0.4
	5/7(71)	2/7(29)	2/7(29)	2/7(29)	0	1/7(14)	1/7(14)	0	0	6/7(86)	2/7(29)	1/7(14)
Central Region	93.5	3.5	0.6	0.5	0.0	0.5	1.3	1.4	0.8	0.1	0.0	0.4
	20/21(95)	1/21(5)	3/21(14)	15/21(71)	5/21(24)	3/21(14)	4/21(19)	3/21(14)	3/21(14)	13/21(62)	5/21(24)	3/21(14)
Southwestern Region	96.0	0.5	0.3	0.9	0.1	0.8	1.5	2.0	1.4	0.1	0.0	0.5
	100%	0	1/21(5)	100%	7/21(33)	5/21(24)	4/21(19)	6/21(29)	6/21(29)	14/21(67)	2/21(10)	6/21(29)
Southeastern Region	93.5	4.0	0.2	0.7	0.0	0.2	1.3	1.0	0.5	0.1	0.0	0.3
	22/25(88)	3/25(12)	0	16/25(64)	0	1/25(4)	7/25(28)	1/25(4)	1/25(4)	14/25(56)	1/25(4)	0
Northwestern Region	96.3	1.8	0.3	0.4	0.0	0.3	0.8	1.0	0.7	0.1	0.0	0.3
	100%	0	1/13(8)	5/13(39)	4/13(31)	1/13(8)	1/13(8)	2/13(15)	2/13(15)	2/13(15)	1/13(8)	0
Northeastern Region	96.0	2.2	0.2	0.3	0.0	0.5	0.8	1.4	0.8	0.0	0.0	0.5
	100%	0	1/21(5)	5/21(24)	4/21(19)	3/21(14)	1/21(5)	2/21(10)	2/21(10)	10/21(48)	2/21(10)	3/21(14)

Source: U.S. Census Bureau, 2000

Note:

1. The regional statistics are un-weighted averages
2. Shaded statistics show the proportion and the % of counties in the region with rate greater than State level

Though Hispanics were only 2% of Missouri's total population, their highest concentration (9%) was located in McDonald and Sullivan Counties followed by Pulaski, Jackson, Barry, and Saline Counties where they were 4% to 6% of Missouri's population.

Percent Hispanic Population (Any Race)

The country of origin further categorizes all Hispanic races. It is defined as the number of individuals reporting Hispanic/Mexican/Puerto Rican/Cuban/other Hispanic Latino ethnicity divided by the total population reporting ethnicity. This data suggested that 2.1% of all Missourians are Hispanic. The largest ethnic group had Mexican origin, representing 67% of all the Hispanic population in Missouri.

Indices of Racial and Economic Separation

Racial Dissimilarity Indices

AHRQ provided three racial dissimilarity indices: Black, Hispanic, and All Non-White. These are defined as the percent of the Black/Hispanic/All Non-White population in an area that would have to move from all area zip codes to have an equal proportion of the area's Black/Hispanic/All Non-White population. The Racial Dissimilarity Index for Blacks was higher than the state level in about 43% of the counties in the St. Louis Metro. The racial dissimilarity index for Hispanics was higher than the state level in 69% of the counties in the northwestern region (Table 4.3).

Economic Indices

Two economic indices, Gini Coefficient and the Economic Dissimilarity Index, are provided by AHRQ. The Gini Coefficient is defined as the proportion of income that would have to be redistributed to equalize the incomes of all residents of an area. The Economic Dissimilarity Index shows the percent of the population with family incomes less than $15,000 per year in an area that would have to move from all area zip codes to have an equal proportion of the population with family incomes less than $15,000 per year.

According to the Gini Coefficient, inequality of income distribution was greater than the state level in the majority of the relatively less urbanized counties of the central, both southern and both northern regions. Twenty-three out of twenty-five (92%) counties in the southeastern region had greater than state level inequality of income distribution. For the southwestern region this percent was 81%, followed by northwestern (77%) and northeastern (76%) Table 4.3.

Greater economic dissimilarities were observed in the counties of the two metro regions (St. Louis and Kansas City) for the low-income population (Table 4.3).

Table 4.3: Community Context - Indices of Racial and Economic Separation					
BRFSS Regions	**Number (Percent) of Counties of the Region With Racial Dissimilarity Indices Greater than the State Level**			**Number (Percent) of Counties of the Region With Economic Indices Greater than the State Level**	
	Black	**Hispanic**	**All Non-White**	**Gini-Coefficient**	**Dissimilarity Index**
Missouri	33/115 (29)	39/115 (34)	13/115 (11)	77/115 (67)	8/115 (7)
Kansas City Metro	1/7 (14)	2/7 (29)	1/7 (14)	1/7 (14)	3/7 (43)
St. Louis Metro	4/7 (43)	2/7 (29)	2/7 (29)	1/7 (14)	3/7 (43)
Central Region	5/21 (24)	5/21 (24)	2/21 (10)	9/21 (43)	0/21 (0)
Southwestern Region	7/21 (33)	6/21 (29)	1/21 (5)	17/21 (81)	1/21 (5)
Southeastern Region	9/25 (36)	6/25 (24)	4/25 (16)	23/25 (92)	1/25 (4)
Northwestern Region	4/13 (31)	9/13 (69)	2/13 (15)	10/13 (77)	0/13 (0)
Northeastern Region	4/21 (19)	9/21 (43)	1/21 (5)	16/21 (76)	0/21 (0)

Reference: Book II, Billings and Weinick (2003). Source: 2001 Claritas (1999 interpolated estimate) Claritas Inc.
Note: The statistics show the proportion and the % of counties in the region with rate greater than State level

Immigrant Population

Percent Population Foreign Born

Percent Population Foreign Born is determined by the number of individuals born outside of U.S. divided by the total population for whom nativity and place of birth is reported. The 2000 U.S. Census data showed that 2.7 % of the Missouri population was foreign born (Table 4.4). Appendix 4(c) portrays the foreign-born population in Missouri counties. Their concentration (5% to 6%) was in the counties of Sullivan, Jackson, Boone, Pulaski, McDonald and St. Louis. Most of these counties were the same with greater concentration of Hispanic population.

Foreign Born

Two indicators are used to show the foreign born population in the area. The first indicator, *Percent Lived in U.S. 10 Years or Less,* is defined as the number of individuals born outside of the U.S. who have lived in the U.S. for 10 years or less, divided by the total number of individuals born outside of the U.S. Of Missouri's foreign-born population, 52.4% lived in the U.S. for 10 or less years (Table 4.4).

The second indicator, *Percent Naturalized Citizen* is defined as the number of individuals born outside of the U.S. who have been naturalized as U.S. citizens, divided by the total number of individuals born outside of the U.S. About 41% of Missouri's foreign-born population was naturalized (Table 4.4).

Place of Foreign Birth

The foreign born population in Missouri was categorized based on six different regions of the world. The percent Latin America/Asia/Africa/Europe/North America/Oceania is defined as the number of individuals born in Latin-America/Asia/Africa/Europe/North America/Oceania divided by the total number of individuals born outside of the U.S. (Table 7.4). The majority of the foreign born populations in Missouri were from Asia (35%), Europe (29%) and Latin America (26%) Table 4.4.

Percent Speak Non-English at Home

This measure is defined as the number of individuals age 5 and older speaking a language other than English at home, divided by the total population age 5 and older who reported language spoken at home. About 5% of Missourians did not speak English at home (Table 4.4). The GIS map in Appendix 4(c) portrays the county level data on percent of people who speak non-English at home. Sullivan, McDonald, and Daviess stand out as the counties with the highest concentration in this category with 5% to 6% of the population who did not speak English at home. Sullivan and McDonald were the counties with the highest concentration of Hispanics. Daviess is one of the few counties with 99% Whites.

Table 4.4: Community Context - Immigrant Population, 2000											
BRFSS Regions	% Population Foreign Born	Foreign Born		Place of Foreign Birth						% Speak Non-English at Home	% Speak English Less than Very Well
		% Lived in U.S. 10 Years or Less	% Naturalized Citizen	% Latin America	% Asia	% Africa	% Europe	% North America	% Oceania		
Missouri	2.7	52.4	40.9	25.8	34.9	5.6	28.5	4.2	1.0	5.1	2.0
Kansas City Metro	2	43.5	45.5	35.7	27.2	4.2	27.3	4.7	0.9	4.1	1.6
	3/7 (43)	1/7 (14)	5/7 (71)	4/7 (57)	2/7 (29)	3/7 (43)	4/7 (57)	4/7 (57)	4/7 (57)	3/7 (43)	2/7 (29)
St. Louis Metro	2.2	44	48.8	22	30.3	3.7	37.9	5.5	0.7	4.2	1.6
	2/7 (29)	1/7 (14)	6/7 (86)	2/7 (29)	1/7 (14)	2/7 (29)	6/7 (86)	4/7 (57)	1/7 (14)	2/7 (29)	2/7 (29)
Central Region	1.6	37.9	51.1	22.5	27.7	4.9	38.6	5.8	0.5	4.2	1.5
	4/21(19)	7/21(33)	14/21(67)	6/21(29)	7/21(33)	7/21(33)	14/21(62)	11/21(52)	3/21(14)	7/21(33)	6/21(29)
Southwestern Region	1.5	38.9	50.7	33.6	20.6	1.5	33.3	8.9	2.1	3.7	1.5
	1/21 (5)	5/21 (24)	13/21(62)	12/21(57)	2/21(10)	2/21(10)	14/21(57)	16/21(76)	8/21(38)	4/21(19)	6/21(29)
Southeastern Region	0.8	39.6	50.1	22.3	27.6	0.9	40.6	6.5	2.1	2.4	0.8
	0/25 (0)	6/25 (24)	19/25 (76)	7/25 (28)	9/25(36)	0/25 (0)	21/25(84)	13/25(52)	9/25(36)	1/25 (4)	0/25 (0)
Northwestern Region	0.8	32.6	52.8	17.7	30.9	2.6	39.7	7.7	1.5	3.2	1.2
	1/13 (8)	3/13 (23)	8/13 (62)	4/13 (31)	4/13(31)	2/13(15)	9/13(69)	9/13 (69)	4/13(31)	2/13(15)	2/13(15)
Northeastern Region	1.1	36.7	47.3	29.9	25.8	0.6	36.3	6.2	1.2	3.8	1.5
	2/21(10)	5/21 (24)	13/21 (62)	8/21 (38)	6/21(29)	0/21 (0)	13/21(62)	8/21 (38)	5/21(24)	5/21(24)	3/21(14)
Worth County	0.2	0.0	100.0	0.0	60.0	0.0	40.0	0.0	0.0	2.0	0.4
Putnam County	0.5	0.0	100.0	44.4	22.2	0.0	14.8	18.5	0.0	2.8	0.7

Source: U.S. Census, 2000
Note:

1. The regional statistics are un-weighted averages
2. Shaded statistics show the proportion and the % of counties in the region with rate greater than State level
3. 100% of Worth and Putnam counties' population is naturalized citizen of the United States and have no individual born outside of the U.S. who have lived in the U.S. for 10 years or less

Percent Speak English Less than Very Well

The Percent that speak English Less Than Very Well is defined as the number of individuals age 5 and older who report speaking English less than very well, divided by the total population age 5 and older who reported language spoken at home. About 2% of all Missourians spoke English less than very well (Table 4.4). The GIS map portraying the county data on percent of people who spoke English less than very well is in Appendix 4(c). Their highest concentration (6.6% to 10.2%) was in the counties of McDonald, Sullivan, Pulaski, Scotland, Daviess, Jackson, Boone, Moniteau, and Morgan.

Economy

Percent Below Poverty

This measure is based on 2000 data from the Census Bureau and was defined as the number of total individuals and in the age groups 0-17, 18-64 and 65+ with incomes less than 100 percent of the federal poverty level, divided by the total population in the respective age group for whom poverty status is reported. Table 4.5 reports the regional statistics for the percent below poverty and the proportion of counties in the regions with rates greater than the state level. Missouri's county level data on population below poverty level (total and under different age groups) was previously reported (Table 1.3 and Map 1.3).

According to the 2002 estimates from U.S. Census Bureau, Missouri ranked 23rd in the nation with 11.3% of its residents in poverty. 18.7% of Missouri's children under the age of 5 were in poverty and Missouri ranked 22nd in the nation for this age group. For the age group 5-17 years, 14% were in poverty ranking Missouri 21st in the nation.

Median Household Income ($)

Median household income in Missouri was $37,934 in 2000 and increased in 2002 to $40,309. Missouri ranked 32nd in the nation from the highest median household income in 2002. The Kansas City Metro region had the highest median income ($44,969) and the southeastern region had the lowest median income at $26,928, based on 2000 estimates (Table 4.5). The GIS map portraying the median income by county is in Appendix 4(d). Ten counties (Wright, Texas, Shannon, Carter, Wayne, Oregon, Ripley, Dunklin, Pemiscot, and Mississippi) with median income less than $25,000 are located in the southeastern region. The highest median income of $43,475 - $57,258 was found in Platte, Clay, Cass, Charles, Jefferson, St. Louis, and St. Louis City. All of these counties are located in the two metro regions of Kansas City and St. Louis.

Percent Households Income Under $15,000

At the state level the percent of households with income under $15,000 was 17.1%. The lowest percent (12.1%) of people with household income less than $15,000 was in the Kansas City Metro region, while the highest number was in the southeastern region at 28%. In the southeastern region, twenty-four out of twenty-five (96%) counties had a greater percent of households with income under $15,000 as compared to the state level (Table 4.5). Appendix 4(d) contains the GIS map that portrays the percent of population with income less than $15,000 by county. Eleven out of 12 counties in Missouri with the highest concentration (30% - 37%) are located in the southeastern region. Adair stands out as the only county outside this region with 31% of Missourians with income less than $15,000.

Percent Households Income Over $75,000

Seventeen point six percent of all households in Missouri had income greater than $75,000. The greater percent was in the Kansas City Metro region (20.9%) and the lowest was in the southeastern region (7.7%). In the former region, 86% of the counties had a percent greater than the state level but in the latter none of the twenty-five counties had a percent greater than the state level (Table 4.5). Counties with a high concentration of Missourians with income over $75,000 were located in and around the Kansas City Metro and St. Louis Metro (Appendix 4(d)).

The counties of Boone (Columbia) and Cole (Jefferson City) were the other two counties outside the two metro regions that had a greater percentage of Missourians with incomes over $75,000.

Table 4.5: Community Context – Economy, 2000

Area	% Below Poverty				Median House-hold Income ($)	% House-hold Income Under $15,000	% House-hold Income Over $75,000	% House-hold Under $15,000 on Public Assist-ance	Mean Public Assist-ance Amount ($)	% Ages 16+ Not In Labor Force	% Ages 16+ Unem-ployed
	Total	Ages 0-17	Ages 18-64	Ages 65+							
Missouri	11.7	15.3	10.4	9.9	37,934	17.1	17.6	19.6	2,292	34.8	5.3
Kansas City Metro	7.5	9.4	6.5	7.8	44969.3	12.1	20.9	19.3	2261.0	31.6	4.0
	1/7(14)	1/7(14)	1/7(14)	1/7(14)	7/7(100)	0/7(0)	6/7(86)	4/7(57)	2/7(29)	0/7(0)	1/7(14)
St. Louis Metro	9.4	12.4	8.1	8.9	44052.3	13.5	20.8	23.0	2330.9	32.0	5.3
	1/7(14)	1/7(14)	1/7(14)	2/7(29)	6/7(86)	1/7(14)	6/7(86)	6/7(86)	4/7(57)	1/7(14)	1/7(14)
Central Region	12.9	16.7	11.6	11.0	33458.6	19.6	10.8	16.5	1960.9	37.9	5.0
	11/21(52)	12/21(57)	12/21(57)	13/21(62)	3/21(14)	15/21(71)	2/21(10)	5/21(24)	4/21(19)	17/21(81)	8/21(38)
Southwestern Region	15.0	20.5	13.2	12.4	30109.9	22.1	8.7	16.3	2001.2	40.2	5.4
	19/21(91)	17/21(81)	20/21(95)	16/21(81)	1/21 (5)	20/21(95)	0/21(0)	1/21 (5)	5/21(24)	18/21(86)	7/21(33)
Southeastern Region	19.4	25.8	17.0	16.8	26928.2	28.0	7.7	18.6	1995.2	43.5	6.7
	22/25(88)	22/25(88)	23/25(92)	24/25(96)	0/25(0)	24/25(96)	0/25(0)	8/25(32)	5/25(20)	23/25(92)	21/25(84)
Northwestern Region	12.9	15.0	12.0	12.1	31715.7	21.4	9.6	13.8	2007.0	39.1	4.4
	10/13(77)	5/13(39)	8/13(61)	11/13(85)	1/13 (8)	12/13(92)	0/13(0)	1/13 (8)	2/13(15)	11/13(85)	5/13(39)
Northeastern Region	14.7	18.4	13.1	13.4	29849.7	23.5	8.2	13.7	1889.6	38.6	4.6
	19/21(91)	16/21(81)	19/21(91)	20/21(95)	0/21(0)	20/21(95)	0/21(0)	1/21 (5)	4/21(19)	19/21(91)	2/21(10)

Source: U.S. Census, 2000
Note:
1. The regional statistics are un-weighted averages
2. Shaded statistics show the proportion and the % of counties in the region with rates greater than State level

Percent Households Under $15,000 on Public Assistance

About one in every five persons with income less than $15,000 per year was receiving public assistance in Missouri. The greatest percent was from the St. Louis region and the lowest percent was from the northeastern region (Table 4.5). Appendix 4(d) contains the GIS maps portraying the county level percent of households under $15,000 on public assistance.

Mean Public Assistance Amount ($)

Mean public assistance income of the households in Missouri was $2,292. The lowest amount of $1,889 was received in the northeastern region and the highest amount of $2,331 was in the St. Louis Metro region (Table 7.5).

Percent Ages 16+ Not In Labor Force

The percent of young adults ages 16 and older not in the labor force, for the state of Missouri, was 35%. The highest percent of individuals, ages 16 and older who were not in the labor force was in the southeastern region (43.5%) and the lowest was in the Kansas City Metro region (31.6%) Table 4.5. Appendix 4(d) portrays county level data in the GIS map. Nine of thirteen counties, with about 50% of Missourians not in labor force, were located in the southeastern region.

Percent Ages 16+ Unemployed

The unemployment rate for Missouri was 5.3% in the year 2000. The unemployment rate was highest in the southeastern region at 6.7% and the lowest in the Kansas City Metro region at 4% (Table 4.5). Two GIS maps in Appendix 4(d) portray the percent unemployed. Six out of the nine counties that had the highest concentration of unemployed Missourians was located in the southeastern region (9% - 11%). In the second GIS map the county level percents were compared with the state level (5.3%). The southeastern region stands out with 21 out of 25 counties with an unemployment percent higher than the state level. Overall, 45 of 115 counties in Missouri had a percent of unemployment higher than the state level.

Living Arrangements, Housing, Education, and Crime

Living Arrangements

Two indicators are used to measure living arrangement. The first indicator is *Percent of Families with Non-Married Parent* and the second indicator is *Percent Living Alone.* The *Living Alone* category is further broken up into *Total Living Alone* and the *Age 65+ Living Alone*.

Total Living Alone is defined as the number of people living alone divided by the total population. In Missouri, 11% of all individuals lived alone. Appendix 4(e) contains GIS maps portraying the percent of Missourians living alone all ages, and 65 years and older. The highest concentration was in St. Louis City (17%). Most of northern Missouri and a few counties in the southeastern region showed a higher concentration of Missourians of all ages, and 65 years and older living alone.

The individuals *Age 65+ Living Alone* is the number of people age 65 and older living alone divided by the total population age 65 and older. The 2000 U.S. Census data showed that 30% of all senior citizens lived alone in the state of Missouri.

Percent of Families Living with Non-Married Parent is the number of family households with a single parent or a non-married couple, divided by the total number of family households. About 30% of all individuals in Missouri had this type of living arrangement. According to the GIS maps in Appendix 4(e), the southeastern region stands out with a higher concentration of single parent households. The counties of Mississippi, Pemiscot, and St. Louis City had the highest concentration of single parent households with 40, 44, and 57 percent, respectively.

Housing

Percent Owner Occupied is defined as the number of housing units occupied by their owner divided by the total number of occupied housing units. In Missouri, 70.3% of the houses were

occupied by the owners (Table 4.6). GIS maps in Appendix 4(e) portray that 24 counties in Missouri had an owner occupancy rate less than the state level.

Vacancy Rate for Missouri was 7.4%. It is calculated as the number of vacant housing units divided by the total number of housing units (not including seasonal, recreational, and occasional use units) (Table 4.6).

Seventeen percent of the houses in Missouri were considered newer houses because they were built between 1990 and March 2000. More than half (51%) of the houses in the state of Missouri were older than 30 years. These are the number of housing units built in 1969 or earlier divided by the total number of housing units (Table 4.6). Appendix 4(e) contains GIS maps portraying county data on percent of old and new housing in Missouri.

Table 4.6: Community Context - Living Arrangements, Housing, Education, and Crime, 2000

Area	Living Arrangements			Housing				Education		Index Crimes per 10,000
	% Living Alone		% of Families with Non-Married Parent	% Owner Occupied	Vacancy Rate (%)	Housing Age				
	Total	Ages 65+				% 0-10 Years	% 30+ Years	% High School or Less	% College or More	
Missouri	10.7	29.9	28.9	70.3	7.4	17.0	50.6	51.4	48.6	430
Kansas City Metro	9.4	28.2	25.2	73.5	6.0	20.5	44.3	51.6	48.4	387.3
	1/7(14)	1/7(14)	1/7(14)	5/7(71)	1/7(14)	6/7(86)	2/7(29)	3/7(43)	4/7(57)	3/7(43)
St. Louis Metro	9.3	27.8	28.7	75.5	6.6	22.1	42.7	53.6	46.4	470.4
	2/7(29)	1/7(14)	1/7(14)	6/7(86)	2/7(29)	5/7(71)	2/7(29)	5/7(71)	2/7(29)	1/7(14)
Central Region	9.8	29.3	25.4	74.6	8.4	20.3	44.3	61.7	38.3	210.7
	4/21(19)	11/21(52)	1/21 (5)	17/21(81)	16/21(76)	17/21(81)	7/21(33)	18/21(86)	3/21(14)	0/21(0)
Southwestern Region	10.0	28.5	24.8	75.3	8.7	22.3	42.4	63.0	37.0	219.0
	9/21(43)	6/21(29)	2/21(10)	18/21(86)	19/21(91)	16/21(76)	6/21(29)	19/21(91)	2/21(10)	3/21(14)
Southeastern Region	10.3	30.7	27.2	74.1	9.4	17.0	46.3	70.4	29.6	195.4
	9/25(36)	16/25(64)	9/25(36)	18/25(72)	21/25(84)	14/25(56)	7/25 (28)	25/25(100)	0/25(0)	1/25 (4)
Northwestern Region	10.8	31.0	23.1	72.7	10.0	12.8	60.6	61.3	38.7	142.7
	8/13(61)	10/13(77)	1/13 (8)	9/13(69)	12/13(92)	4/13 (31)	10/13(77)	12/13(92)	1/13 (8)	1/13 (8)
Northeastern Region	11.3	32.1	24.4	74.6	11.1	13.3	59.0	65.1	34.9	180.8
	15/21(71)	19/21(91)	3/21(14)	19/21(91)	21/21(100)	2/21(10)	18/21(86)	20/21(95)	1/21 (5)	0/21(0)

Source: U.S. Census, 2000
Note:

1. The regional statistics are un-weighted averages
2. Shaded statistics show the proportion and the % of counties in the region, with rate greater than State level

Education

Half of Missouri's population had a high school or less education and the rest had college or more level of education. These statistics are defined as the number of individuals age 25 years and older with educational attainment of a high school degree (or equivalent)/ education beyond a high school degree, divided by the total population age 25 years and older reporting

educational attainment (Table 4.6). Almost all the counties in the southeastern region had more than 70% population with high school or less education. Appendix 4(e) contains the GIS maps. Mississippi County had the highest level in the state with 77% of the population with less than a high school education.

Index Crimes

At the state level, the value of index of crimes is 430. This implies that 430 crimes (murder, forcible rape, robberies, aggravated assaults, burglaries, larcenies, and auto theft), for every 10,000 Missourians, were committed during the year 1999. The highest rate of 470 was in St. Louis County and the lowest of 143 was in the northwestern region. In Missouri, the highest rate of 1388 was in St. Louis City and the lowest of 14 was in the counties of Ralls and Gentry (Table 4.6).

Compared to other states (31 states for which AHRQ safety net data was available), Missouri ranked 18th. The highest rate of 725 was noted in the District of Columbia and the state of Kansas had the lowest rate at 129.

Relationship Between Community Context and Population Outcomes

AHRQ found serveral associations between community context with population health outcomes.

- At the county level an association was observed between an increasing proportion of the non-white population with a moderate to high increase in negative outcomes, including preventable hospitalizations for all ages and poor birth outcomes. This relationships was weaker at the MSA level. Higher rates of preventable hospitalzation and poor birth outcomes may also be associated with higher racial and economic dissimilarity indices. The racial dissimilarity indices are also associated with lower rates of lacking a usual source of care and having no physician visits in the past year. The association between foreign born and the proportion speaking English less than "very well" was found to be weak, with typically only a slight to low association.[22]
- When looking at the population living alone, there was a moderate positive associations between the proportion of the population living alone and each of the outcomes at the community/county level. Families with only one parent in the household was highly to very strongly associated with higher preventable hospitalization rates and higher rates of poor birth outcomes at the county level. These relationships are the same at the MSA level, but are less strong. It is likely that these associations are related to single parents and those living alone being less likely to take care of themselves, or it may represent a lesser extent of community "cohesion" in areas where these rates are high. Communities/counties with older housing or vacant houses tended to be associated with negative outcomes whereas higher levels of owner-occupied housing were associated with better outcomes.[23]
- Lastly, there was a moderate to very strong association between the proportion of the population who are unemployed with a higher rate of all of the negative outcomes studied at the community/county level. These relationships are maintained at the MSA level, however, they are somewhat less strong for preventable hospitalization and the rate of

[22] Book I, Chapter 6, Billings and Weinick (2003).
[23] See footnote 22.

late or no prenatal care. Similar relationships were found for education. As the proportion of the population having a high school education or less increased, higher rates of negative outcomes were observed. The association between crime rate and health care outcomes followed the same pattern, however, the relationships were less strong.[24]

Based on census data for Missouri, nine community context variables population density, % non-White races, % speak English less than very well, % household income under $15,000, % ages 16+ not in labpr force, % ages 16+ unemployed, % single parent families, % with high school or less education, and index crimes per 10,000 were picked to rank the counties. Table 4.7 shows the individual and composite ranking of top 20% counties with environment of greater potential for health care safety. Complete ranking is at Appendix 4(f).

Table 4.7: Ranking: Environment for Safety Net
(Counties By Composite and Individual Ranks)

	County Name	Population Density	% Non-White Races	% Speak English Less than Very Well	% Households Income Under $15,000	% Ages 16+ Not In Labor Force	% Ages 16+ Unemployed	% Single Parent Families	% With High School or Less Education	Composite Rank of Environment
1	Pemiscot	80	113	74	115	101	109	114	111	817
2	Dunklin	86	104	91	112	98	89	110	108	798
3	St. Louis City	115	115	112	101	65	115	115	21	759
4	Mississippi	60	111	6	113	86	110	113	115	714
5	Butler	89	91	77	95	95	96	106	42	691
6	Washington	59	76	39	94	106	105	91	106	676
7	New Madrid	46	109	13	103	88	82	111	114	666
8	Pike	64	105	102	59	97	56	90	79	652
9	St. Francois	103	106	19	70	38	91	107	95	629
10	Ripley	49	44	43	110	109	108	59	101	623
11	McDonald	68	101	114	83	39	32	86	91	614
12	Sullivan	6	78	115	98	50	67	92	104	610
13	Hickory	39	32	52	89	115	107	84	86	604
14	Wayne	25	26	12	109	113	111	98	110	604
15	Phelps	84	86	89	79	69	93	87	15	602
16	Oregon	24	81	18	111	111	103	49	103	600
17	Howell	69	60	65	99	79	92	74	56	594
18	Ste. Genevieve	36	77	9	114	105	98	42	112	593
19	Texas	45	59	29	104	100	94	81	81	593
20	Iron	30	52	20	90	103	97	103	97	592
21	Audrain	76	97	99	39	78	28	96	77	590
22	Jasper	104	89	101	44	28	95	102	20	583
23	Jackson	113	114	110	23	20	77	112	8	577

Source: Computation of these ranks is based on data from Census 2000, Claritas 2001
Note: The higher rank is assigned to the county/city where the value of these indicators is higher. Therefore, indicating poor environment for health care safety net. This ranking helps with the objective of identifying the counties where environment requires/necessitates the greatest need for the health care safety net in Missouri since greater percentage of non-White races, people with poor English, lower income, out of labor force, unemployed, single parents, and lower level of education would make them less likely to have regular source of health care.

[24] Book I, Chapter 6, Billings and Weinick (2003).

5. Access-Related Outcome Measures

So far, the descriptors of the safety net have been discussed. Details on the composition or structure of the health care providers in the state provided and data that describes the need or demand for services presented. In this section, we will try to link this information to indicators on outcomes and performance of the safety net. This information linkage is essential to understanding more about the relationships of these factors to outcomes and performance and will help policy makers make decisions regarding the allocation of scarce resources.[25]

The indicators used to measure the outcomes and performance of the safety net are limited, especially for vulnerable populations, and presents some challenges when trying to provide uniformity in measurement across the geographic areas of the state. The analysis described in this section will focus on two types of measures: These indicators include:

- Preventable/Avoidable Hospitalizations (Ambulatory Care Sensitive Conditions)

- Births
  - Number of Live Births
  - Not Born in Hospital
  - Inadequate Prenatal Care
  - Teen Mothers
  - Low Birth Weight (Less than 2500 g)
  - Mothers Smoked During Pregnancy
  - Prenatal Care Utilization by the Mothers on Medicaid

Preventable/Avoidable Hospitalizations

The *Preventable/Avoidable Discharges* rate is computed as the number of preventable hospitalization per 10,000 persons in the area, age adjusted 2000 Standard Population. The county level rates are presented in Table 5.1 and Map 5.1. Three counties in Missouri - Pemiscot (513), Ripley (390), and Dunklin (373) - located in the southeastern region, had the highest Preventable Hospitalization rates. Fifty-three of the 115 counties in Missouri had rates greater than the state level.

It should be noted that not all "preventable hospitalizations" are "inappropriate" in the context of being unnecessary or unwarranted. Rather, it simply means that these conditions are generally managed effectively in the ambulatory care setting and that the severity of the condition might have been prevented. It should be acknowledged that not all hospital admissions for preventable hospitalization conditions are preventable or avoidable. Even the best possible medical care cannot prevent progression of some conditions to the stage where hospitalization is required.[26]

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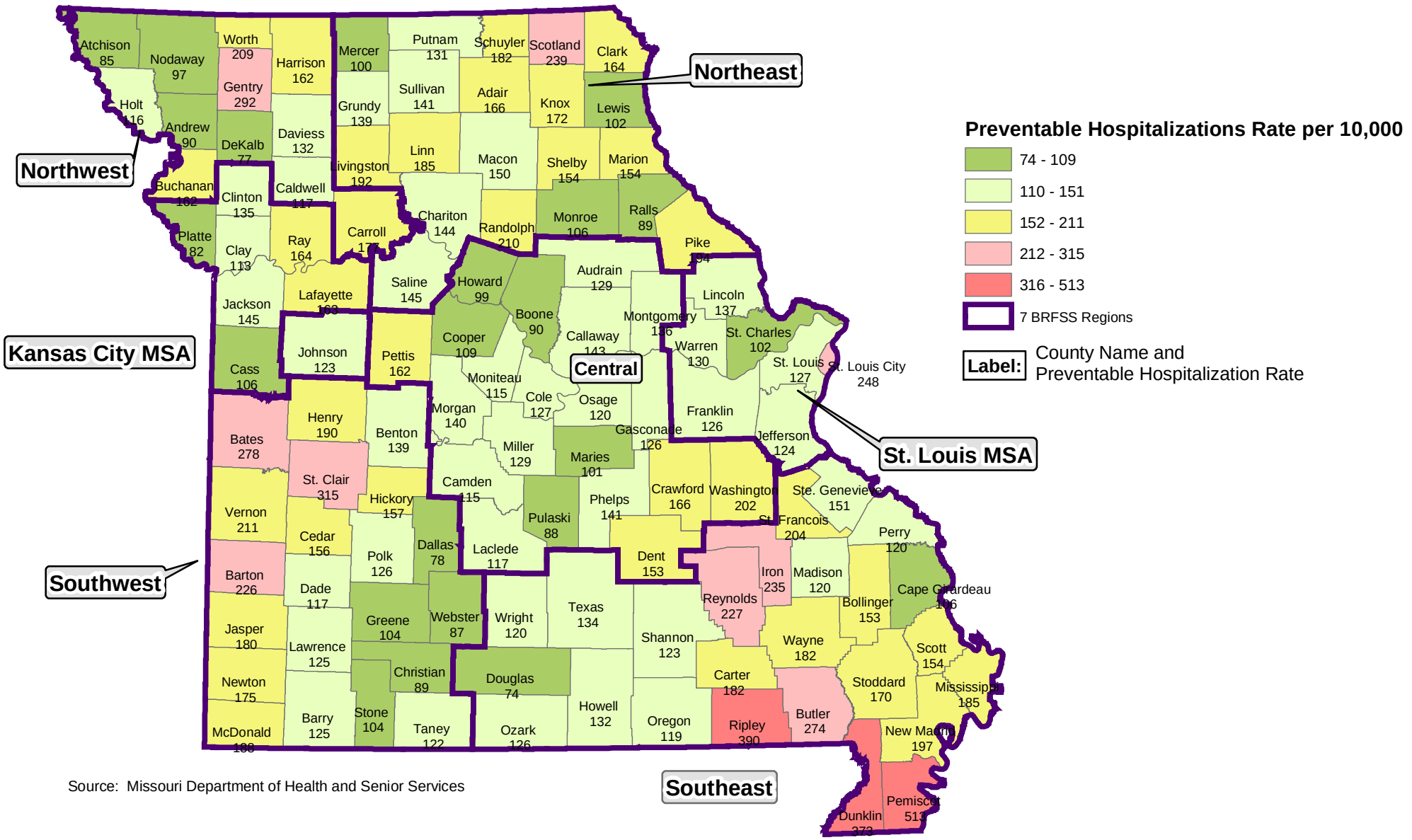
[25] Book I, Chapter 7, Billings and Weinick (2003).
[26] See footnote 24.

Table 5.1: Preventable Hospitalization Statistics in the State of Missouri, 2002								
Region/County	**Number**	**Rate**	**Region/County**	**Number**	**Rate**	**Region/County**	**Number**	**Rate**
Kansas City Metro	**12,989**	**129.7**	**Northeastern Region**	**3,429**	**155.1**	**Southeastern Region**	**9,210**	**190.5**
Cass	824	105.8	Adair	311	165.6	Bollinger	159	153.1
Clay	1,961	113	Chariton	98	144.2	Butler	956	273.6
Clinton	238	134.5	Clark	111	163.6	Cape Girardeau	635	106.3
Jackson	8,536	145.4	Grundy	124	139.1	Carter	94	182
Lafayette	477	162.6	Knox	60	172.2	Douglas	84	73.7
Platte	599	82.3	Lewis	91	102.2	Dunklin	1,079	372.7
Ray	354	164.1	Linn	206	184.5	Howell	428	131.6
St. Louis Metro	**25,623**	**142.1**	Livingston	226	191.6	Iron	217	235.3
Franklin	1,080	125.9	Macon	197	149.7	Madison	122	119.7
Jefferson	2,328	124.3	Marion	370	154.2	Mississippi	231	184.8
Lincoln	510	137.4	Mercer	32	100.1	New Madrid	330	196.7
St. Charles	2,786	102.2	Monroe	88	106.1	Oregon	107	119.1
St. Louis City	11,498	126.8	Pike	309	193.7	Ozark	107	126.1
St. Louis County	7,113	248.1	Putnam	60	130.7	Pemiscot	889	513.4
Warren	308	130.3	Ralls	78	89.1	Perry	187	119.6
Central Region	**7,127**	**130**	Randolph	452	209.8	Reynolds	131	227
Audrain	286	128.8	Saline	277	144.7	Ripley	439	390.2
Boone	1,038	89.8	Schuyler	64	182.2	Scott	551	153.9
Callaway	525	143	Scotland	97	239.4	Shannon	92	123.3
Camden	393	114.9	Shelby	89	154	St. Francois	1,010	203.6
Cole	811	127.4	Sullivan	89	141	Ste. Genevieve	241	151.1
Cooper	155	109.1	**Northwestern Region**	**2,821**	**141.4**	Stoddard	429	169.7
Crawford	339	165.6	Andrew	136	90.1	Texas	299	133.5
Dent	207	153.2	Atchison	47	85.1	Wayne	201	182
Gasconade	167	126.1	Buchanan	1,180	162	Wright	192	120.4
Howard	85	99.3	Caldwell	96	117.2	**Southwestern Region**	**9,938**	**156.8**
Laclede	343	117.3	Carroll	159	177.1	Barry	381	125
Maries	83	101.3	Daviess	95	131.7	Barton	248	226.1
Miller	274	129.3	De Kalb	88	76.9	Bates	414	277.5
Moniteau	148	114.8	Gentry	153	292.2	Benton	229	139.1
Montgomery	143	136.1	Harrison	116	161.8	Cedar	183	156.3
Morgan	239	139.6	Holt	50	115.9	Christian	468	89
Osage	137	119.9	Johnson	506	123.4	Dade	74	116.8
Pettis	551	161.5	Nodaway	157	96.5	Dallas	110	77.8
Phelps	493	140.6	Worth	38	208.5	Greene	2,179	104.4
Pulaski	286	87.8				Henry	368	189.9
Washington	424	202.1				Hickory	112	156.7
						Jasper	1,687	180.4
						Lawrence	400	124.9
						McDonald	371	187.5
Missouri	**71,161**	**142.1**				Newton	831	175.3
						Polk	288	126.1
						St. Clair	258	314.7
						Stone	283	104.1
						Taney	434	121.8
Note: Rate is defined per 10,000						Vernon	366	211.4
Source: Missouri Department of Health and Senior Services						Webster	254	87.2

Map 5.1: Preventable Hospitalization: Rate per 10,000 by Missouri, 2002



Source: Missouri Department of Health and Senior Services

Births

The birth statistics at the state level are presented in Table 5.2. All the indicators are defined per 100 live births. The GIS maps portray county level data and are presented in Appendix 5(a).

Number of Live Births

There were 76,960 live births in Missouri in 2003. Appendix 5(a) provides the number of live births by county.

Not Born in Hospital

In 2003, the number of Missourians not born in hospital was 702 or 0.9 per 100 live births (Table 5.2). County level data portrayed in the GIS map are in Appendix 5(a). This data suggested that the highest number of births (92) not born in hospital were in Webster County followed by Jackson (62). Other prominent counties with higher numbers not born in the hospital were St. Louis County (41), St. Louis City (35), Boone (35), and Greene (30). The rate per 100 live births of Missourians not born in a hospital was again highest for Webster County (19.5) followed by Knox (17.8), and Scotland (13.8).

Inadequate Prenatal Care

Three indicators *Prenatal Care Began First Trimester, No Prenatal Care, and Inadequate Prenatal Care* are included in Table 5.2. In Missouri, less than 1% did not have any prenatal care. For 89%, the prenatal care began in the first trimester. Another measure that best describes health care access is *Inadequate Prenatal Care*. This is defined as fewer than five prenatal visits for pregnancies less than 37 weeks or fewer than eight visits for pregnancies 37 weeks or longer alternatively care beginning after the first four months of pregnancy. In Missouri about 10% of pregnant women had inadequate prenatal care. Data for the Inadequate Prenatal Care indicator is portrayed in the GIS map (Appendix 5(a)). This data suggested the highest number of pregnant women who had inadequate prenatal care were in the two metro regions (St Louis County and St. Louis City) and Jackson County. The rate of inadequate prenatal care per 100 live births was highest in Scotland County (36.5) followed by Pemiscot (28.9), Morgan (29), Knox (28.9), and Reynolds (25.9).

Table 5.2: Birth Statistics for the State of Missouri, 2003			
	Indicator	**Number**	**Rate**
Live Births		**76,960**	**100**
Prenatal Care	Began First Trimester	66,641	88.5
	None	514	0.7
	Inadequate	7,383	10.1
Birth Weight	Very Low (less than 1500 g)	1,245	1.6
	Low (less than 2500 g)	6,194	8
	Normal (2500-4499 g)	69,808	90.7
	High (greater than 4499 g)	932	1.2
Gestation	Low Birth Weight and Full Term	1,843	2.8
	Preterm (less than 37 completed weeks)	10,329	13.4
	Singleton Births Small For Gestational Age	6,360	8.6
Delivery Place	High Risk Deliveries in a Level 2 or 3 Facility	3,162	88.7
Prenatal Service Utilization	Mother on Food Stamps	15,708	21.4
	Mother on Medicaid	33,436	45.4
	Mother on WIC	30,897	42
Method of Delivery:	C-Section	21,320	27.7
	Vaginal Birth After C-Section	1,026	11
Smoked During Pregnancy	Yes	13,895	18.1
	Yes, 1 or More Packs Per Day	2,536	3.3
Unintended Delivery	Includes Live Births and Fetal Deaths	26,603	34.3
Birth Spacing	Less Than 18 Months	4,632	10.8
Education Status	Less Than 12 Years	14,277	18.6
Marital Status	Not Married	27,364	35.6
Number Born	Twin or Other Multiple Birth	2,618	3.4
Prior Live Births	Four or More	3,208	4.2
	Mother Under Age 20	1,630	2.1
Weight Change	Gained Less Than 15 Pounds, Full Term Singleton Birth	5,218	8.3
	Gained More Than 44 Pounds, Full Term Singleton Birth	12,246	19.4
Weight for Height	Mother Overweight 20% or More	27,012	36.9
	Mother Underweight More Than 15%	4,374	6
Birth Place	Not in Hospital	702	0.9
	Very Low Birth Weight Births Delivered in a Level 3 Facility	944	78.3

Sources: Missouri Department of Health and Senior Services, 2003

Teen Mothers

This data is listed under prior births: mothers under age 20. For the state of Missouri, the number of teen mothers was 1,603 or 2.1 per 100 live births (Table 5.2). County level data is portrayed in the GIS map (Appendix 5(a)). This data suggested the highest number of teen mothers was in the two metro regions (St Louis County and St. Louis City) and Jackson County. The rate of births to teen mothers per 100 live births was highest in Pemiscot County (9.1) followed by New Madrid (5.5), Grundy (5.5), and Dent (5.3).

Low Birth Weight (Less than 2500 g)

In 2003, 6,194 or 8% of live births in Missouri had a birth weight of less than 2,500 grams (Table 5.2). The county level data is portrayed in GIS maps (Appendix 5(a)). This data suggested the highest numbers of births with low birth weight were in the two metro regions (St Louis County and St. Louis City) and Jackson County. Twelve counties of Missouri had the highest rate of low birth weight of newborn. The highest rate was in Iron County (16.4) followed by Schuyler (15.6), New Madrid (13.1), Holt (12.3), Pemiscot (11.9), Gentry (11.4), Marion (11.2), and Miller (11.1).

Mothers Smoked During Pregnancy

In Missouri, the number of mothers who smoked during pregnancy was 13,895 or 18.1 per 100 live births (Table 5.2). The county level data is portrayed in GIS maps (Appendix 5(a)). This data suggests the highest number of mothers who smoked during pregnancy were in the two metro regions (St Louis County and St. Louis City) and Jackson and Greene counties. Fourteen counties of Missouri had the highest rate of mothers who smoked during pregnancy. Half of these counties were located in the southeastern region. The highest rate was in Worth County (50).

Prenatal Care Utilization by the Mothers on Medicaid

In 2003, the number of mothers on Medicaid who utilized the prenatal care services was 33,436 or 45.4 per 100 live births in Missouri (Table 5.2). County level data portrayed in GIS maps are in Appendix 5(a). This data suggested the highest number of mothers on Medicaid who utilized the prenatal care services were in the two metro regions (St Louis County, St Louis City, and Jackson County), and Jasper and Greene counties. The highest rate per 100 live births of mothers on Medicaid who utilized the prenatal care services was also in the same areas of Missouri.

Other Vital Statistics

Table 5.2 contains other important vital statistics for Missouri. The Missouri Department of Health and Senior Services maintain this data. According to 2003 data, 89% were born in High Risk Deliveries in a Level 2 or 3 Facility.[27] High Risk Delivery is defined as resident live births weighing less than 2,000 grams and/or with gestational age of less than 34 weeks plus all intrapartum fetal deaths in unspecialized facilities. Rate is percent number of total Missouri resident high-risk deliveries born in Missouri. Twenty-eight percent were caesarian section

[27] Resident live births weighing less than 2,000 grams and/or with gestational age of less than 34 weeks plus all intrapratum fetal deaths in unspecialized facilities. Rate is percent number is of total Missouri resident high-risk deliveries born in Missouri.

births, Twenty-one percent of mothers were on food stamps, and 42% of the mothers were on WIC had used prenatal services.

Relationship of Outcome Measures to Safety Net Performance

"Preventable hospitalizations and birth outcomes are quasi-outcome measures that may be affected by a complex array of factors, including insurance status, care-seeking behavior, and the performance of the health care delivery system. Survey measures such as having a usual source of care may be more sensitive to "front door access" and less influenced by how well these services perform or by the care-seeking behavior of patients."[28]

Based on data for Missouri, four variables inadequate prenatal care, preventable hospitalization, and ER use by uninsured and publicly insured were picked to rank the counties. Table 5.3 shows the individual and composite ranking of top 20% of counties with greater problems to access. Complete ranking is at Appendix 5(b).

Table 5.3: Ranking: Access to Health Care Services
(Counties By Composite and Individual Ranks)

	County Name	ER Use by Uninsured	ER Use by Publicly Insured	Inadequate Prenatal Care	Preventable Hospitalization	Composite (Access)
1	St. Louis	114	115	101	115	445
2	Jasper	111	111	91	108	421
3	Newton	106	105	97	100	408
4	Dunklin	92	96	114	105	407
5	Jackson	115	114	61	114	404
6	Butler	98	98	105	102	403
7	Taney	105	100	109	85	399
8	Pettis	99	92	106	94	391
9	St. Louis City	113	113	49	113	388
10	St. Francois	103	102	66	103	374
11	Greene	112	112	31	110	365
12	Camden	91	90	100	79	360
13	Lawrence	96	97	81	80	354
14	Callaway	89	80	87	93	349
15	Scott	88	101	65	95	349
16	Buchanan	104	107	30	107	348
17	Ripley	67	82	112	86	347
18	Boone	108	106	28	104	346
19	Jefferson	107	109	19	111	346
20	Clay	109	108	18	109	344
21	Barry	93	89	83	78	343
22	St. Charles	110	110	7	112	339
23	Audrain	75	87	110	63	335

Source: Computation of these ranks is based on data from Missouri Department of Health and Senior Services
Note: The higher rank indicates poor access to the health care safety net. This ranking helps with the objective of identifying the counties of Missouri with poor access to primary/preventive health care.

[28] Book I, Chapter 7, Billings and Weinick (2003).

Summary: Relationship of Outcome Measures to Demand, Support, Structure and Context Measures[29]

National studies have shown some very strong associations between many of the outcome measures and some of the individual demand, support, structure, and contextual indicators and are listed below:

- very strong association between preventable hospitalization rates for older adults and area poverty rates
- moderate association observed for preventable hospitalization rates for children
- strong association exist between poverty levels and birth outcomes as well as between race/ethnicity and both potentially preventable hospitalization rates and birth outcomes

National studies, using multivariate analysis for preventable hospitalization and birth outcomes and "personal distress" indicators (poverty, unemployment, disability, high school or less education level, single-parent households, and living alone) and "community distress" indicators (crime rates, housing vacancy rates, age of housing, and home ownership) have produced some surprising results and are shown in Tables 5.3 and 5.4.

[29] Book I, Chapter 7, Billings and Weinick (2003).

Table 5.4. Multivariate Analysis of Community and Safety Net Characteristics on Patient Outcomes and Performance of the Safety Net: Preventable Hospitalizations in Cities, Suburban Counties, and County Residuals[30]

	Preventable/Avoidable (ACS) Hospitalizations		
	Children Ages 0-17	Adults Ages 18-39	Adults Ages 40-64
Characteristics associated with lower rates/ better outcomes	Greater extent of Medicaid coverage More hospital outpatient capacity/use Higher managed care penetration More pediatricians Greater concentration of low-income residents Western U.S. residence	Higher level of disproportionate share hospital (DSH) payments Greater extent of Medicaid coverage More hospital outpatient capacity/use Higher public hospital presence Higher managed care penetration Higher foreign-born population Western U.S. residence Eastern U.S. residence	Higher level of DSH payments Greater extent of Medicaid coverage Higher public hospital presence Higher foreign-born population Greater concentration of low-income residents Western U.S. residence
Characteristics associated with higher rates/worse outcomes	Greater levels of personal distress Higher black population Higher Asian population Higher foreign-born population Higher teaching hospital presence Eastern U.S. residence	Greater levels of personal distress Higher black population Higher Asian population Greater concentration of non-white residents	Greater levels of personal distress Higher black population Higher Asian population Higher Hispanic population Higher teaching hospital presence
Characteristics having no association with outcomes	More community distress Higher level of DSH payments Higher investor-owned hospital presence Higher public hospital presence Higher Hispanic population Greater concentration of non-white residents	More community distress Higher investor-owned hospital presence Higher teaching hospital presence Higher Hispanic population Greater concentration of low-income residents More primary care physicians	More community distress More hospital outpatient capacity/use Higher investor-owned hospital presence Higher managed care penetration Greater concentration of non-white residents Eastern U.S. residence More primary care physicians

Source: Book I, Chapter 7, Billings and Weinick (2003)

[30] Book I, Chapter 7, Billings and Weinick (2003).

Table 5.5: Multivariate Analysis of Community and Safety Net Characteristics on Patient Outcomes and Performance of the Safety Net: Birth Outcomes in Cities, Suburban Counties, and County Residuals[31]

	Birth Indicators		
	Late/No Prenatal Care	Low Birth Weight Full Term	Preterm Births
Characteristics associated with lower rates/ better outcomes	Higher level of disproportionate share hospital (DSH) payments Greater extent of Medicaid coverage Higher managed care penetration Higher foreign-born population	Greater extent of Medicaid coverage Higher managed care penetration Western U.S. residence	Higher level of DSH payments Greater extent of Medicaid coverage More hospital outpatient capacity/use Higher public hospital presence Higher managed care penetration Higher foreign-born population Eastern U.S. residence Western U.S. residence
Characteristics associated with higher rates/worse outcomes	Greater levels of personal distress Higher teaching hospital presence Higher black population Eastern U.S. residence Western U.S. residence Greater concentration of low-income residents	Greater levels of personal distress Higher investor-owned hospital presence Higher teaching hospital presence Higher black population Higher Asian population	Greater levels of personal distress Higher investor-owned hospital presence Higher black population Higher Asian population Higher Hispanic population Greater concentration of non-white residents
Characteristics having no association with outcomes	More community distress More hospital outpatient capacity/use Higher investor-owned hospital presence Higher public hospital presence Higher Asian population Higher Hispanic population Greater concentration of non-white residents More obstetrician/gynecologists	More community distress Higher level of DSH payments More hospital outpatient capacity/use Higher public hospital presence Higher Hispanic population Higher foreign-born population Eastern U.S. residence Greater concentration of low-income residents Greater concentration of non-white residents More obstetrician/gynecologists	More community distress Higher teaching hospital presence Greater concentration of low-income residents More obstetrician/gynecologists

[31] Book I, Chapter 7, Billings and Weinick (2003).

Other interesting results from the multivariate analysis include:

- Areas with higher managed care penetration experienced lower preventable hospitalization rates and better birth outcomes. This may suggest that the competition between managed care organizations may potentially improve safety net performance, due to the organizations being more responsive to patient demands or face a loss of the market share.

- Higher levels of foreign-born populations either were associated with better outcomes or had no association with outcomes. This may be due to better health status of these populations. One exception to this was with larger immigrant populations that have higher children's preventable hospitalization rates, and may be attributed to learning how to navigate the health care system or the care-seeking behavior of foreign-born parents.

Conclusions Drawn by AHRQ Include:[32]

Federal and State Financing of the Safety Net Helps.

Medicaid programs with a greater extent of coverage and higher disproportionate share hospital payments are generally associated with lower preventable hospitalization rates and better birth outcomes.

Public Facilities Matter.

For adults, a greater presence of public hospitals is associated with lower preventable hospitalization rates. A greater public hospital presence is also associated with lower rates of preterm births.

More Providers is Not Always the Answer.

While having more pediatricians is associated with lower preventable hospitalization rates for children, greater availability of adult primary care physicians has no association with preventable hospitalization rates for adults, and having more obstetrician/gynecologists has no impact on birth outcomes.

The relationship between provider supply and preventable hospitalizations may vary by region. See, for example, an analysis of New York State in Basu J, Friedman B, Burstin H. Primary care, HMO enrollment, and hospitalization for ambulatory care sensitive conditions: A new approach. Med Care 2002 Dec; 40(12):1260-9.

Levels of Personal Distress are a Concern.

Across all age groups, higher levels of poverty, unemployment, disability, low education, and social isolation are associated with higher levels of preventable hospitalizations and worse birth outcomes.

[32] Book I, Chapter 7, Billings and Weinick (2003).

Race/Ethnicity is a Factor.

Across all age groups, larger black and Asian populations are associated with higher preventable hospitalization rates and worse birth outcomes. For older adults, larger Hispanic populations are also associated with higher preventable hospitalization rates.

AHRQ noted an unexpected finding related to the impact of levels of community distress (the combined impact of crime rates, housing stock, housing vacancy rates, and home ownership) had no association with preventable hospitalization rates or birth outcomes.

It was also noted in the AHRQ report that the impact of investor-owned hospitals on the viability of local safety nets had no association with preventable hospitalization rates or levels of late/no prenatal care. However, there was an association between a greater investor-owned hospital presence and higher levels of low birth weight and preterm births. This association will require additional analysis in order to better understand the impact these hospitals have on the safety net.

6. Consolidated Safety Net Ranking

Earlier, different aspects of health care safety net were used to rank the counties. Table 6.1 consolidates all the rankings and presents an overall ranking of top 20% Missouri counties that need attention. Table containing the consolidated ranking for all the counties of Missouri is at Appendix 6(a). The GIS maps for the composite ranking of counties of Missouri for demand, environment, acess, system and structure, and overall safety ranking is at Appendix 6(b).

Table 6.1: Consolidated Safety Net Ranking
(Counties By Individual and Composite Ranking)

	County Name	Demand	Environment	Access	System and Structure	Safety Net Composite
1	New Madrid	108	109	75	104	396
2	Dunklin	112	114	112	53	391
3	Pemiscot	114	115	91	66	386
4	Mississippi	95	112	62	103	372
5	McDonald	74	105	73	111	363
6	Pike	96	108	70	88	362
7	Ripley	89	106	99	68	362
8	Jasper	104	94	114	45	357
9	Stoddard	111	92	87	61	351
10	Texas	103	98	76	72	349
11	Washington	113	110	90	36	349
12	Butler	107	111	110	18	346
13	Wayne	94	103	58	89	344
14	St. Francois	110	107	106	8	331
15	Shannon	101	87	25	115	328
16	Barry	97	85	95	49	326
17	Phelps	109	101	92	22	324
18	Carter	98	81	32	110	321
19	Oregon	86	100	20	108	314
20	Howell	106	99	83	25	313
21	Hickory	102	102	27	77	308
22	Reynolds	85	86	55	81	307
23	Dent	81	84	60	80	305

Source: Computation of these ranks is based on data from Department of Insurance, 2003, Department of Social Services, Department of Health and Senior Services, U.S. Census, 2000, Claritas, 2001, and HICAS, 2004

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Appendix - 1

Health Care Safety Net Measures, Their Definition, and Data Sources Suggested by AHRQ

Note: Definition of Disability Status

Individuals were classified as having a disability if any of the following three conditions were true:

1) They were 5 years old and over and had a response of ‘‘yes’’ to a sensory, physical, mental or self-care disability; or

2) They were 16 years old and over and had a response of ‘‘yes’’ to going outside the home disability; or

3) They were 16 to 64 years old and had a response of ‘‘yes’’ to employment disability.

Disability Conditions asked of population 5 years old and over:

(a) Sensory Disability:	Blindness, deafness, or a severe vision or hearing impairment
(b) Physical Disability:	A condition that substantially limits one or more basic physical activities, such as walking, climbing stairs, reaching, lifting, or carrying
(c) Mental Disability:	Learning, remembering, or concentrating
(d) Self-Care Disability:	Dressing, bathing, or getting around inside the home

Disability Conditions asked of population 16 years old and over:

(e) Going Outside the Home Disability:	Going outside the home alone to shop or visit a doctor’s office

Disability Conditions asked of population 16 to 64 years old only:

(f) Employment Disability: Employment disability; and working at a job or business

If any of the above condition of disability with the exception of (f) is true then individuals age 65 years old and over are considered disabled.

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources

Measure	Definition	Data Source(s)	Methodological Notes
Demand for Safety Net Services			
% Uninsured			
Percent of the population under age 65 that is uninsured	Number of uninsured individuals under age 65 divided by the total population under age 65.	1999–2001 Current Population Survey–3-year average	Data available only at state and large MSA level because of CPS sample size limits.
Percent of the population under age 65 with family incomes below 200 percent of the Federal poverty line that is uninsured	Number of individuals under age 65 with family incomes less than 200 percent of the Federal poverty line who are uninsured, divided by the number of individuals under age 65 with family incomes less than 200 percent of the Federal poverty line.	1999–2001 Current Population Survey–3-year average	Data available only at state and large MSA level because of CPS sample size limits.
% Below Poverty			
Percent of the population with incomes below 100 percent of the Federal poverty line	Number of individuals with family incomes less than 100 percent of the Federal poverty line, divided by the total population for whom poverty status is reported.	U.S. Census 2000	Federal poverty level determinations are not adjusted for differences in cost of living among areas.
Percent of the population ages 0–17 with incomes below 100 percent of the Federal poverty line	Number of individuals ages 0–17 with family incomes less than 100 percent of the Federal poverty line, divided by the total population ages 0–17 for whom poverty status is reported.	U.S. Census 2000	Federal poverty level determinations are not adjusted for differences in cost of living among areas.

Key to abbreviations

—	Indicates that data are not available at this area level. For example, estimates of the percent of the population that is uninsured can be made only at the state and MSA levels with our data, so counties, cities, and county residuals are coded "—."
No Data	Indicates that data were not collected or processed for this specific area.
n/a	Indicates that data should be available for this specific area, but are missing.
No Hosp	Indicates that there is no hospital in the county.
One Hosp	Indicates that there is only one hospital in county, so there is no meaningful analysis of this measure.
Suppressed	Indicates that data have been suppressed to protect the identity of a single facility or to protect personal privacy (cell size less than 5 individuals).
Low Pop	Indicates that data are not presented because the small population size of the area prevents statistically meaningful analysis.

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Demand for Safety Net Services (continued)			
Percent of the population ages 18–64 with incomes below 100 percent of the Federal poverty line	Number of individuals ages 18–64 with family incomes less than 100 percent of the Federal poverty line, divided by the total population ages 18–64 for whom poverty status is reported.	U.S. Census 2000	Federal poverty level determinations are not adjusted for differences in cost of living among areas.
Percent of population age 65 and older with family incomes below 100 percent of Federal poverty line	Number of individuals age 65 and older with family incomes less than 100 percent of the Federal poverty line, divided by the total population age 65 and older for whom poverty status is reported.	U.S. Census 2000	Federal poverty level determinations are not adjusted for differences in cost of living among areas.
% With a Disability			
Percent of the population ages 5–20 who have a disability	Number of individuals ages 5–20 reporting a disability, divided by the number of civilian non-institutionalized individuals ages 5–20 for whom disability status is reported.	U.S. Census 2000	People 5 years old and over are considered to have a disability if they have one or more of the following: (a) blindness, deafness, or a severe vision or hearing impairment; (b) a substantial limitation in the ability to perform basic physical activities, such as walking, climbing stairs, reaching, lifting, or carrying; (c) difficulty learning, remembering, or concentrating; or (d) difficulty dressing, bathing, or getting around inside the home. In addition to the above criteria, people 16 years old and over are considered to have a disability if they have difficulty going outside the home alone to shop or visit a doctor's office, and people 16–64 years old are considered to have a disability if they have difficulty working at a job or business.

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Demand for Safety Net Services (continued)			
Percent of the population ages 21–64 who have a disability	Number of individuals ages 21–64 reporting a disability, divided by the number of civilian non-institutionalized individuals ages 21–64 for whom disability status is reported.	U.S. Census 2000	People 5 years old and over are considered to have a disability if they have one or more of the following: (a) blindness, deafness, or a severe vision or hearing impairment; (b) a substantial limitation in the ability to perform basic physical activities, such as walking, climbing stairs, reaching, lifting, or carrying; (c) difficulty learning, remembering, or concentrating; or (d) difficulty dressing, bathing, or getting around inside the home. In addition to the above criteria, people 16 years old and over are considered to have a disability if they have difficulty going outside the home alone to shop or visit a doctor's office, and people 16–64 years old are considered to have a disability if they have difficulty working at a job or business.
Percent of the population age 65 and older who have a disability	Number of individuals age 65 and older reporting a disability, divided by the number of civilian non-institutionalized individuals age 65 and older for whom disability status is reported.	U.S. Census 2000	People 5 years old and over are considered to have a disability if they have one or more of the following: (a) blindness, deafness, or a severe vision or hearing impairment; (b) a substantial limitation in the ability to perform basic physical activities, such as walking, climbing stairs, reaching, lifting, or carrying; (c) difficulty learning, remembering, or concentrating; or (d) difficulty dressing, bathing, or getting around inside the home. In addition to the above criteria, people 16 years old and over are considered to have a disability if they have difficulty going outside the home alone to shop or visit a doctor's office, and people 16–64 years old are considered to have a disability if they have difficulty working at a job or business.

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Demand for Safety Net Services (continued)			
AIDS Cases per 100,000			
AIDS prevalence per 100,000 population	Cumulative number of individuals with AIDS reported to the Centers for Disease Control and Prevention, divided by the total population, multiplied by 100,000 (available at the MSA level only).	Numerator from data maintained by the Centers for Disease Control and Prevention; Denominator from 2001 Claritas (1999 interpolated estimate)	
Financial Support for Safety Net Services			
Medicaid Program			
Extent of Medicaid coverage	State-level standardized index of income eligibility levels for the Medicaid program for pregnant women, children, and infants.	UCLA Center for Health Policy Research	
Percent of the population under age 65 with family incomes below 200 percent of the Federal poverty line that is enrolled in Medicaid	Number of individuals under age 65 with family incomes less than 200 percent of the Federal poverty line who are enrolled in Medicaid, divided by the number of individuals under age 65 with family incomes less than 200 percent of the Federal poverty line.	1999–2001 Current Population Survey–3-year average	Data available only at state and large MSA level because of CPS sample size limits.
Medicaid expenditures per person under age 65 with family incomes below 200 percent of the Federal poverty line (excludes long-term care expenditures)	Total State and Federal Medicaid expenditures for services other than long-term care, divided by the number of individuals under age 65 with family incomes less than 200 percent of the Federal poverty line.	Numerator: Centers for Medicare and Medicaid Services–HCFA-2082 Reports; Denominator: 1999–2001 Current Population Survey–3-year average	Data available only at state and large MSA level because of CPS sample size limits.
DSH Funds ($) per Person Below Poverty			
Medicare Disproportionate Share Hospital payments per person with family incomes less than 100 percent of the Federal poverty line	Total Medicare Disproportionate Share Hospital payments to hospitals, divided by the number of individuals with family incomes less than 100 percent of the Federal poverty line.	Numerator: Centers for Medicare and Medicaid Services; Denominator: U.S. Census 2000	Medicaid DSH payments were not readily available at the local level.

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Financial Support for Safety Net Services (continued)			
CHC in Area			
Presence of a Community Health Center	Presence or absence of a federally funded Community Health Center in the area.	Health Resources and Services Administration–Uniform Data System Data	Note: Community health centers serve many areas reaching beyond county boundaries—these data indicate presence/absence of community health center located in the county.
Uncompensated Care Pooling			
Uncompensated care pooling	Presence or absence of an uncompensated care pool in the state. An uncompensated care pool helps finance hospital-based care for uninsured patients by providing financial support to hospitals and other providers to help defray the expenses of uncompensated care.	Local governments and State hospital associations	
Safety Net Structure—Inpatient Care			
Admissions by Hospital Ownership Type			
Hospital admissions by ownership type: Percent in public facilities	Number of admissions to public hospitals, divided by the total number of admissions to all area hospitals (limited to non-Federal general medical/surgical facilities).	1999 American Hospital Association Annual Survey	Figures are based on location of the hospital (not patient origin which may be from other counties).
Hospital admissions by ownership type: Percent in not-for-profit facilities	Number of admissions to not-for-profit hospitals, divided by the total number of admissions to all area hospitals (limited to non-Federal general medical/surgical facilities).	1999 American Hospital Association Annual Survey	Figures are based on location of the hospital (not patient origin which may be from other counties).
Hospital admissions by ownership type: Percent in investor-owned facilities	Number of admissions to investor-owned hospitals, divided by the total number of admissions to all area hospitals (limited to non-Federal general medical/surgical facilities).	1999 American Hospital Association Annual Survey	Figures are based on location of the hospital (not patient origin which may be from other counties).

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Safety Net Structure—Inpatient Care (continued)			
Admissions by Teaching Status			
Hospital admissions by teaching status: Percent "no teaching"	Number of admissions to hospitals with no medical residents, divided by the total number of admissions to all area hospitals (limited to non-Federal general medical/surgical facilities).	1999 American Hospital Association Annual Survey	Figures are based on location of the hospital (not patient origin which may be from other counties).
Hospital admissions by teaching status: Percent "low teaching"	Number of admissions to hospitals with 1 to 4 medical residents per 100 staffed beds, divided by the total number of admissions to all area hospitals (limited to non-Federal general medical/surgical facilities).	1999 American Hospital Association Annual Survey	Figures are based on location of the hospital (not patient origin which may be from other counties).
Hospital admissions by teaching status: Percent "moderate teaching"	Number of admissions to hospitals with 5 to 14 medical residents per 100 staffed beds, divided by the total number of admissions to all area hospitals (limited to non-Federal general medical/surgical facilities).	1999 American Hospital Association Annual Survey	Figures are based on location of the hospital (not patient origin which may be from other counties).
Hospital admissions by teaching status: Percent "major teaching"	Number of admissions to hospitals with 15 or more medical residents per 100 staffed beds, divided by the total number of admissions to all area hospitals (limited to non-Federal general medical/surgical facilities).	1999 American Hospital Association Annual Survey	Figures are based on location of the hospital (not patient origin which may be from other counties).
Structure of the Safety Net—Concentration and Distribution of Inpatient Uncompensated Care and Medicaid Discharges			
Uncompensated and Medicaid Discharges			
Uncompensated and Medicaid discharges: Index of market concentration	An index that indicates the extent to which the market share of uncompensated care and Medicaid patients is concentrated in a small number of hospitals, with a higher value indicating greater concentration. ("Herfindahl Index")	Patient discharge data–1999 HCUP and other sources	
Uncompensated and Medicaid discharges: Cost shifting index	Percent on average that area hospitals must raise charges to commercial patients to make up for the revenue lost through the provision of uncompensated care (Percent on average that area hospitals must raise commercial charges to "cost shift" uncompensated care).	Patient discharge data–1999 HCUP and other sources	
Uncompensated and Medicaid discharges: Gini coefficient	Percent of area patients who would have to change hospitals to equalize uncompensated care and Medicaid discharges across all area hospitals.	Patient discharge data–1999 HCUP and other sources	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Structure of the Safety Net—Concentration and Distribution of Inpatient Uncompensated Care and Medicaid Discharges (continued)			
Uncompensated and Medicaid discharges: Percent of discharges from high-burden hospitals	Percent of patients in hospitals with a cost shifting index greater than or equal to 0.25.	Patient discharge data–1999 HCUP and other sources	
Structure of the Safety Net—Ambulatory Care			
Outpatient Visits per Admission			
Outpatient department visits per admission	Number of visits to outpatient departments of area hospitals divided by number of admissions to area hospitals.	1999 American Hospital Association Annual Survey	Figures are based on location of the hospital (not patient origin which may be from other counties).
CAP Grant			
Presence of Community Access Program (CAP) grant	Presence or absence of a Community Access Program (CAP) grant from the Health Resources and Services Administration. The CAP grants build on existing models of service integration to help health care providers develop integrated, community-wide systems that serve the uninsured and underinsured.	Health Resources and Services Administration	Data available at the MSA level only since the "service area" of many CAP programs evolves over time and often includes multiple counties.
Health Care Delivery System			
HMO Competition Index			
HMO competition index	An index that indicates the extent to which the market share of managed care is concentrated in a small number of health plans, with a higher value indicating greater concentration. ("Herfindahl Index")	1999 InterStudy	Data available at the MSA level only.
HMO Penetration (%)			
HMO penetration rate	Percent of area population enrolled in Health Maintenance Organizations.	1999 InterStudy	Data available at the MSA level only.
Medicare Managed Care Penetration (%)			
Medicare managed care penetration	Number of Medicare managed care enrollees divided by the total number of Medicare beneficiaries.	2001 Area Resource File (1999 Data)	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Health Care Delivery System (continued)			
Physician Supply per 100,000			
Number of pediatricians per 100,000 children	Number of pediatricians divided by the number of individuals ages 0–17, multiplied by 100,000 (non-Federal, patient care physicians).	Numerator from 2001 Area Resource File (1999 Data); Denominator from 2001 Claritas (1999 interpolated estimate)	Figures are based on location of physician (not patient origin which may be from other counties).
Number of adult primary care providers per 100,000 adults	Number of general internists, family practitioners, and general practitioners, divided by the number of individuals age 18 and older, multiplied by 100,000 (non-Federal, patient care physicians).	Numerator from 2001 Area Resource File (1999 Data); Denominator from 2001 Claritas (1999 interpolated estimate)	Figures are based on location of physician (not patient origin which may be from other counties).
Number of obstetricians/ gynecologists per 100,000 women	Number of obstetricians/gynecologists divided by the total number of women age 15 and older, multiplied by 100,000 (non-Federal, patient care physicians).	Numerator from 2001 Area Resource File (1999 Data); Denominator from 2001 Claritas (1999 interpolated estimate)	Figures are based on location of physician (not patient origin which may be from other counties).
Number of medical specialty doctors per 100,000 population	Number of medical specialty doctors divided by the total population, multiplied by 100,000 (non-Federal, patient care physicians). Medical specialties include allergy and immunology, cardiovascular disease, dermatology, gastroenterology, internal medicine subspecialties, pediatric subspecialties, pediatric cardiology, and pulmonary disease.	Numerator from 2001 Area Resource File (1999 Data); Denominator from 2001 Claritas (1999 interpolated estimate)	Figures are based on location of physician (not patient origin which may be from other counties).
Number of surgical specialty doctors per 100,000 population	Number of surgical specialty doctors, divided by the total population, multiplied by 100,000 (non-Federal, patient care physicians). Surgical specialties include colon/rectal surgery, general surgery, neurological surgery, ophthalmology, orthopedic surgery, otolaryngology, plastic surgery, thoracic surgery, and urology.	Numerator from 2001 Area Resource File (1999 Data); Denominator from 2001 Claritas (1999 interpolated estimate)	Figures are based on location of physician (not patient origin which may be from other counties).

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Health Care Delivery System (continued)			
Supply/Utilization per 1,000			
Number of inpatient hospital beds per 1,000 population	Number of inpatient hospital beds divided by the total population, multiplied by 1,000 (non-Federal general medical/surgical facilities).	Numerator from 1999 American Hospital Association Annual Survey; Denominator from 2001 Claritas (1999 interpolated estimate)	
Number of inpatient hospital admissions per 1,000 population	Number of admissions to inpatient hospitals divided by the total population, multiplied by 1,000 (non-Federal general medical/surgical facilities).	Numerator from 1999 American Hospital Association Annual Survey; Denominator from 2001 Claritas (1999 interpolated estimate)	Figures are based on location of physician (not patient origin which may be from other counties).
Health Care Delivery System (continued)			
Number of emergency department visits per 1,000 population	Number of visits to emergency departments divided by the total population, multiplied by 1,000 (non-Federal general medical/surgical facilities).	Numerator from 1999 American Hospital Association Annual Survey; Denominator from 2001 Claritas (1999 interpolated estimate)	Figures are based on location of physician (not patient origin which may be from other counties).
Community Context—Population			
Total Population			
Total population	Total number of people in the area.	U.S. Census 2000	
Square Miles			
Square miles	The size of the area in square miles.	2001 Claritas (1999 interpolated estimate)	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Community Context—Population (continued)			
Population Density			
Population density	Total population, divided by the number of square miles.	Numerator from U.S. Census 2000; Denominator from 2001 Claritas (1999 interpolated estimate)	
% Population			
Percent of population ages 0–17	Population ages 0–17 divided by the total population.	U.S. Census 2000	
Percent of population ages 18–64	Population ages 18–64 divided by the total population.	U.S. Census 2000	
Percent of population age 65 and older	Population age 65 and older divided by the total population.	U.S. Census 2000	
% Population Change 1990–2000			
Percent population change 1990–2000, total	2000 total population minus 1990 total population, divided by 1990 population.	U.S. Census 2000	
Percent population change 1990–2000, ages 0–17	2000 total population ages 0–17 minus 1990 total population ages 0–17, divided by 1990 population aged 0–17.	U.S. Census 2000	
Percent population change 1990–2000, ages 18–64	2000 total population ages 18–64 minus 1990 total population ages 18–64, divided by 1990 population ages 18–64.	U.S. Census 2000	
Percent population change 1990–2000, age 65 and older	2000 total population age 65 and older minus 1990 total population age 65 and older, divided by 1990 population age 65 and older.	U.S. Census 2000	
Community Context—Race/Ethnicity			
% Population			
Percent of the population identifying their race as white	Number of individuals reporting white race divided by the total population reporting race.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for race.
Percent of the population identifying their race as black	Number of individuals reporting black race divided by the total population reporting race.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for race.
Percent of the population identifying their race as Asian American	Number of individuals reporting Asian-American race divided by the total population reporting race.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for race.

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Community Context—Race/Ethnicity (continued)			
Percent of the population identifying their race as Native American	Number of individuals reporting Native-American race divided by the total population reporting race.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for race.
Percent of the population identifying their race as Native Hawaiian or Pacific Islander	Number of individuals reporting Native-Hawaiian and other Pacific Islander race, divided by the total population reporting race.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for race.
Percent of the population identifying their race as "other"	Number of individuals reporting some other race (not white, black, Asian American, Native American, or Pacific Islander), divided by the total population reporting race.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for race.
Percent of the population identifying two or more races	Number of individuals indicating two or more races divided by the total population reporting race.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for race.
% Population Hispanic (Any Race)			
Percent of the population identifying their ethnicity as Hispanic or Latino, any race	Number of individuals reporting Hispanic ethnicity divided by the total population reporting ethnicity.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for Hispanic categories.
Percent of the population identifying their ethnicity as Mexican, any race	Number of individuals reporting Mexican ethnicity divided by the total population reporting ethnicity.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for Hispanic categories.
Percent of the population identifying their ethnicity as Puerto Rican, any race	Number of individuals reporting Puerto Rican ethnicity divided by the total population reporting ethnicity.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for Hispanic categories.
Percent of the population identifying their ethnicity as Cuban, any race	Number of individuals reporting Cuban ethnicity divided by the total population reporting ethnicity.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for Hispanic categories.
Percent of the population identifying their ethnicity as other Hispanic or Latino, any race	Number of individuals reporting "Other Hispanic or Latino" ethnicity (not Mexican, Puerto Rican, or Cuban) divided by the total population reporting ethnicity.	U.S. Census 2000	See U.S. Census 2000 documentation for detailed description of definitions for Hispanic categories.

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Community Context—Indices of Racial and Economic Separation			
Racial Dissimilarity Indices			
Racial dissimilarity index–Black	Percent of the black population in an area that would have to move for all area zip codes to have an equal proportion of the area's black population.	2001 Claritas (1999 interpolated estimate)	
Racial dissimilarity index–Hispanic	Percent of the Hispanic-American population in an area that would have to move for all area zip codes to have an equal proportion of the area's Hispanic population.	2001 Claritas (1999 interpolated estimate)	
Racial dissimilarity index–All non-white	Percent of the non-white population in an area that would have to move for all area zip codes to have an equal proportion of the area's non-white population.	2001 Claritas (1999 interpolated estimate)	
Community Context—Indices of Racial and Economic Separation (continued)			
Economic Indices			
Gini coefficient	The proportion of income that would have to be redistributed to equalize the incomes of all residents of an area.	2001 Claritas (1999 interpolated estimate)	
Economic dissimilarity index	Percent of the population with family incomes less than $15,000 per year in an area that would have to move for all area zip codes to have an equal proportion of the population with family incomes less than $15,000 per year.	2001 Claritas (1999 interpolated estimate)	
Community Context—Immigrant Population			
% Population Foreign Born			
Percent of the population that is foreign born	Number of individuals born outside of the U.S. divided by the total population for whom nativity and place of birth is reported.	U.S. Census 2000	
Foreign Born			
Percent of the foreign-born population that has lived in the U.S. 10 years or less	Number of individuals born outside of the U.S. who have lived in the U.S. for 10 years or less, divided by the total number of individuals born outside of the U.S.	U.S. Census 2000	
Percent of the foreign-born population that has been naturalized as a U.S. citizen	Number of individuals born outside of the U.S. who have been naturalized as U.S. citizens, divided by the total number of individuals born outside of the U.S.	U.S. Census 2000	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Community Context—Immigrant Population (continued)			
Place of Foreign Birth			
Place of foreign birth: Latin America	Number of individuals born in Latin America divided by the total number of individuals born outside of the U.S.	U.S. Census 2000	
Place of foreign birth: Asia	Number of individuals born in Asia divided by the total number of individuals born outside of the U.S.	U.S. Census 2000	
Place of foreign birth: Africa	Number of individuals born in Africa divided by the total number of individuals born outside of the U.S.	U.S. Census 2000	
Place of foreign birth: Europe	Number of individuals born in Europe divided by the total number of individuals born outside of the U.S.	U.S. Census 2000	
Place of foreign birth: North America	Number of individuals born in North America (outside of the U.S.), divided by the total number of individuals born outside of the U.S.	U.S. Census 2000	
Place of foreign birth: Oceania	Number of individuals born outside of the U.S. but not on one of the above-named continents (Latin America, Asia, Africa, Europe, or North America), divided by the total number of individuals born outside of the U.S.	U.S. Census 2000	
% Speak Non-English at Home			
Percent of the population speaking a language other than English at home	Number of individuals age 5 and older speaking a language other than English at home, divided by the total population age 5 and older who reported language spoken at home.	U.S. Census 2000	
% Speak English Less Than Very Well			
Percent of the population speaking English less than very well	Number of individuals age 5 and older who report speaking English less than very well, divided by the total population age 5 and older who reported language spoken at home.	U.S. Census 2000	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Community Context—Economy			
% Below Poverty			
Percent of total population that is below 100 percent of Federal poverty line	Number of individuals with incomes less than 100 percent of the Federal poverty level, divided by the total population for whom poverty status is reported.	U.S. Census 2000	
Percent of population ages 0–17 below 100 percent of Federal poverty line	Number of individuals ages 0–17 with incomes less than 100 percent of the Federal poverty level, divided by the total population ages 0–17 for whom poverty status is reported.	U.S. Census 2000	
Percent of population ages 18–64 below 100 percent of Federal poverty line	Number of individuals ages 18–64 with family incomes less than 100 percent of the Federal poverty level, divided by the total population ages 18–64 for whom poverty status is reported.	U.S. Census 2000	
Percent of population age 65 and older below 100 percent of Federal poverty line	Number of individuals age 65 and older with family incomes less than 100 percent of the Federal poverty level, divided by the total population age 65 and older for whom poverty status is reported.	U.S. Census 2000	
Median Household Income ($)			
Median household income	Median household income.	U.S. Census 2000	
% Households Income Under $15,000			
Percent of households with incomes less than $15,000	Number of households with total incomes less than $15,000 per year, divided by the total number of households.	U.S. Census 2000	
% Households Income Over $75,000			
Percent of households with incomes greater than $75,000	Number of households with total incomes greater than $75,000 per year divided by the total number of households.	U.S. Census 2000	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Community Context—Economy (continued)			
% Households Under $15,000 on Public Assistance			
Percent of households with incomes below $15,000 receiving public assistance	Number of households with incomes less than $15,000 per year receiving public assistance, divided by the total number of households with incomes below $15,000 per year.	U.S. Census 2000	
Mean Public Assistance Amount ($)			
Mean amount of public assistance	Mean public assistance income of households receiving public assistance.	U.S. Census 2000	
% Ages 16+ Not in Labor Force			
Percent of the population age 16 and older that is not in the labor force	Number of individuals age 16 and older who are not in the labor force, divided by the total population age 16 and older reporting employment status. The labor force includes people age 16 and older who are either employed, actively seeking work, or awaiting recall from layoff.	U.S. Census 2000	
% Ages 16+ Unemployed			
Percent of the population age 16 and older that is unemployed	Number of individuals age 16 and older who are unemployed, divided by the total population age 16 and older reporting employment status.	U.S. Census 2000	
Community Context—Living Arrangements, Housing, Education, and Crime			
Living Arrangements			
Percent living alone	Number of people living alone divided by the total population.	U.S. Census 2000	
Percent living alone, age 65 and older	Number of people age 65 and older living alone divided by the total population age 65 and older.	U.S. Census 2000	
Percent of families with non-married couple or single parent	Number of family households with a single parent or a non-married couple, divided by the total number of family households.	U.S. Census 2000	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Community Context—Living Arrangements, Housing, Education, and Crime (continued)			
Housing			
Housing: Percent owner occupied	Number of housing units occupied by their owner divided by the total number of occupied housing units.	U.S. Census 2000	
Housing: Vacancy rate	Number of vacant housing units divided by the total number of housing units (not including seasonal, recreational, and occasional use units).	U.S. Census 2000	
Housing Age: 0–10 years	Number of housing units built between 1990 and March 2000, divided by the total number of housing units.	U.S. Census 2000	
Housing Age: more than 30 years	Number of housing units built in 1969 or earlier divided by the total number of housing units.	U.S. Census 2000	
Education			
Educational attainment: high school or less	Number of individuals age 25 years and older with educational attainment of a high school degree (or equivalent) or less, divided by the total population age 25 years and older reporting educational attainment.	U.S. Census 2000	
Educational attainment: some college or more	Number of individuals age 25 years and older with educational attainment of some education beyond a high school degree, divided by the total population age 25 years and older reporting educational attainment.	U.S. Census 2000	
Index Crimes per 10,000			
Index crime rate per 10,000 population	Number of index crimes (murder, forcible rape, robberies, aggravated assaults, burglaries, larcenies, and auto theft), divided by the total area population, multiplied by 10,000.	Numerator from Federal Bureau of Investigations Uniform Crime Reports; Denominator from 2001 Claritas (1999 interpolated estimate)	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Access-Related Outcome Measures—Preventable/Avoidable Hospitalizations (Ambulatory Care Sensitive Conditions)			
Preventable/Avoidable Discharges These are conditions for which timely and effective ambulatory care can help prevent or avoid the need for hospitalization.			
Ages 0–17			
Preventable/avoidable hospitalization rate, ages 0–17	Preventable/avoidable discharges per 1,000 persons ages 0–17 in the area, adjusted for age and sex.	Patient discharge data–1999 HCUP and other sources; 2001 Claritas (1999 interpolated estimate)	
Adjusted ratio to mean for preventable/avoidable discharges, ages 0–17	Ratio of area rate of preventable/avoidable discharges for persons ages 0–17 to the mean rate for all areas for persons ages 0–17, adjusted to take into account differences in physician practice style. See Methods section for more detailed discussion.	Patient discharge data–1999 HCUP and other sources; 2001 Claritas (1999 interpolated estimate)	
Observed to expected ratio for preventable/avoidable discharges, ages 0–17	Actual ("observed") area rate of preventable/avoidable discharges for persons ages 0–17, divided by "expected" area rate for persons ages 0–17, adjusted for physician practice style and area income and race/ethnic composition. See Methods section for more detailed discussion.	Patient discharge data–1999 HCUP and other sources; 2001 Claritas (1999 interpolated estimate)	
Ages 18–39			
Preventable/avoidable hospitalization rate, ages 18–39	Preventable/avoidable discharges per 1,000 persons ages 18–39 in the area, adjusted for age and sex.	Patient discharge data–1999 HCUP and other sources; 2001 Claritas (1999 interpolated estimate)	
Adjusted ratio to mean for preventable/avoidable discharges, ages 18–39	Ratio of area rate of preventable/avoidable discharges for persons ages 18–39 to the mean rate for all areas for persons ages 18–39, adjusted to take into account differences in physician practice style. See Methods section for more detailed discussion.	Patient discharge data–1999 HCUP and other sources; 2001 Claritas (1999 interpolated estimate)	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Access-Related Outcome Measures—Preventable/Avoidable Hospitalizations (Ambulatory Care Sensitive Conditions) (continued)			
Observed to expected ratio for preventable/avoidable discharges, ages 18–39	Actual ("observed") area rate of preventable/avoidable discharges for persons ages 18–39, divided by "expected" area rate for persons ages 18–39, adjusted for physician practice style and area income and race/ethnic composition. See Methods section for more detailed discussion.	Patient discharge data–1999 HCUP and other sources; 2001 Claritas (1999 interpolated estimate)	
Ages 40–64			
Preventable/avoidable hospitalization rate, ages 40–64	Preventable/avoidable discharges per 1,000 persons ages 40–64 in the area, adjusted for age and sex.	Patient discharge data–1999 HCUP and other sources; 2001 Claritas (1999 interpolated estimate)	
Adjusted ratio to mean for preventable/avoidable discharges, ages 40–64	Ratio of area rate of preventable/avoidable discharges for persons ages 40–64 to the mean rate for all areas for persons ages 40–64, adjusted to take into account differences in physician practice style. See Methods section for more detailed discussion.	Patient discharge data–1999 HCUP and other sources; 2001 Claritas (1999 interpolated estimate)	
Observed to expected ratio for preventable/avoidable discharges, ages 40–64	Actual ("observed") area rate of preventable/avoidable discharges for persons ages 40–64, divided by "expected" area rate for persons ages 40–64, adjusted for physician practice style and area income and race/ethnic composition. See Methods section for more detailed discussion.	Patient discharge data–1999 HCUP and other sources; 2001 Claritas (1999 interpolated estimate)	
Access-Related Outcome Measures—Births			
Number of Births			
Number of births	Number of births occurring in the area during 1999.	1999 Vital Statistics data	
% Late or No Prenatal Care			
Rate of late or no prenatal care, in percent	Number of births in area with no prenatal care or prenatal care initiated in the third trimester, divided by the total number of births for which prenatal care status is known.	1999 Vital Statistics data	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Access-Related Outcome Measures—Births (continued)			
Ratio to mean for late or no prenatal care	Area rate for births with no prenatal care or prenatal care initiated in the third trimester, divided by mean rate for all areas.	1999 Vital Statistics data	
Observed to expected ratio for late or no prenatal care	Actual ("observed") area rate for births with no prenatal care or prenatal care initiated in the third trimester, divided by the "expected" area rate, adjusted for area income and racial/ethnic composition. See Methods section for more detailed discussion.	1999 Vital Statistics data	
% Low Birth Weight (Full-Term Births)			
Rate of low birth weight for full-term births in percent	Number of low birth weight (less than 2,500 grams) full-term (37 weeks or longer) births in area, divided by the total number of births for which birth weight and gestation period is known.	1999 Vital Statistics data	
Ratio to mean for low birth weight for full-term births	Area rate for low birth weight (less than 2,500 grams) full-term (37 weeks or longer) births, divided by the mean rate for all areas.	1999 Vital Statistics data	
Observed to expected ratio for low birth weight for full-term births	Actual ("observed") area rate for low birth weight (less than 2,500 grams) full-term (37 weeks or longer) births, divided by the "expected" area rate, adjusted for area income and racial/ethnic composition. See Methods section for more detailed discussion.	1999 Vital Statistics data	
% Preterm Births			
Rate of preterm births, in percent	Number of preterm births (less than 37 weeks gestation) in area, divided by the total number of births for which gestation period is known.	1999 Vital Statistics data	
Ratio to mean for preterm births	Area rate for preterm births (less than 37 weeks gestation), divided by the mean rate for all areas.	1999 Vital Statistics data	
Observed to expected ratio for preterm births	Actual ("observed") area rate for preterm births (less than 37 weeks gestation), divided by the "expected" area rate, adjusted for area income and racial/ethnic composition. See Methods section for more detailed discussion.	1999 Vital Statistics data	

Table A-1: Measures Included in This Data Book, Their Definitions, and Data Sources (continued)

Measure	Definition	Data Source(s)	Methodological Notes
Access-Related Outcome Measures—Survey-Based Reported Barriers to Access			
% Population Below 200% of Poverty Reporting			
Percent of population below 200 percent of the Federal poverty line reporting they have no usual source of care	Number of individuals with family incomes below 200 percent of the Federal poverty line reporting that they have no usual place to go if they are sick or in need of advice about their health, divided by the number of individuals with family incomes below 200 percent of the Federal poverty line.	1999–2000 National Health Interview Survey–2-year average	Data available only for very large MSAs because of NHIS sample size limits.
Percent of population below 200 percent of the Federal poverty line reporting they are unable to obtain "needed" care	Number of individuals with family incomes below 200 percent of the Federal poverty line reporting that they delayed or did not obtain health care they thought they needed because of cost, divided by the number of individuals with family incomes below 200 percent of the Federal poverty line.	1999–2000 National Health Interview Survey–2-year average	Data available only for very large MSAs because of NHIS sample size limits.
Percent of population below 200 percent of the Federal poverty line reporting no doctor's visit in the past year	Number of individuals with family incomes below 200 percent of the Federal poverty line reporting that they had not had any doctor's visits within the last year, divided by the number of individuals with family incomes below 200 percent of the Federal poverty line.	1999–2000 National Health Interview Survey–2-year average	Data available only for very large MSAs because of NHIS sample size limits.
Percent of population below 200 percent of the Federal poverty line reporting no doctor's visit in the past 2 years	Number of individuals with family incomes below 200 percent of the Federal poverty line reporting that they had not had any doctor's visits within the last 2 years, divided by the number of individuals with family incomes below 200 percent of the Federal poverty line.	1999–2000 National Health Interview Survey–2-year average	Data available only for very large MSAs because of NHIS sample size limits.

Appendix – 1(a)

Institute of Medicine Recommendations

Recommendations of Institute of Medicine for Improving the State of Health Care Safety Net

Recommendation 1:

Federal and state policy makers should explicitly take into account and address the full impact (both intended and unintended) of changes in Medicaid policies on the viability of safety net providers and populations they serve.

Recommendation 2:

All federal programs and policies targeted to support the safety net and populations it serves should be reviewed for their effectiveness in meeting the needs of the uninsured.

Recommendation 3:

The committee recommends that concerted efforts be directed to improving this nation's capacity and ability to monitor the changing structure, capacity, and financial stability of the safety net to meet the health care needs of the uninsured and vulnerable populations.

Recommendation 4:

Given the growing number of uninsured people, the adverse effects of Medicaid managed care on safety net provider revenues, and the absence of concerted public policies directed at increasing the rate of insurance coverage, the committee believes that a new targeted federal initiative should be established to help support core safety net providers that care for a disproportionate number of uninsured and other vulnerable people.

Recommendation 5:

The committee recommends that technical assistance programs and policies targeted to improving the operations and competitive position of safety net providers be enhanced and better coordinated.

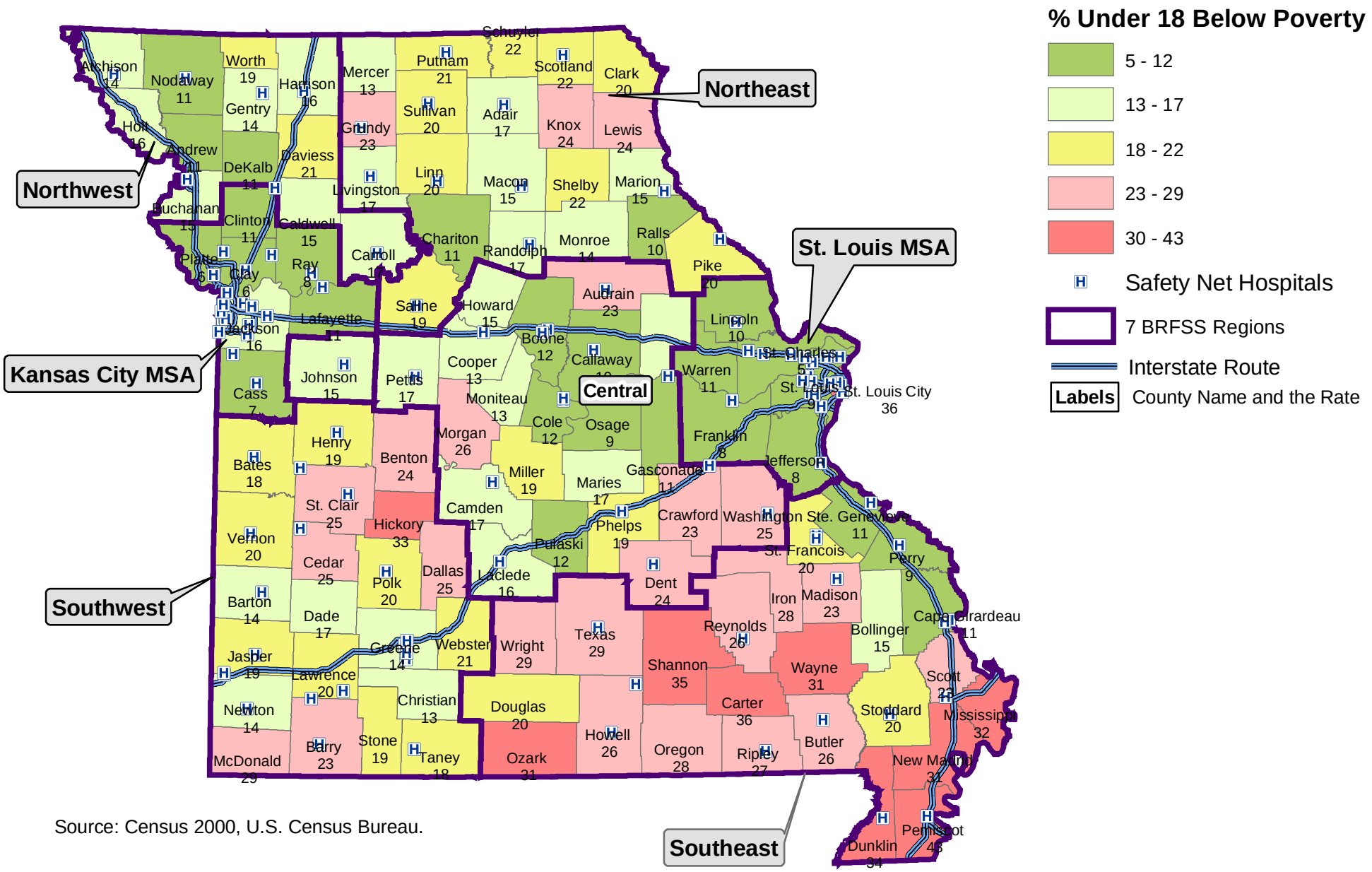
Source: American Institute of Medicine, "America's Health Care Safety Net, Intact but Endangered," National Academy Press, Washington, D.C., 2000

Appendix - 1(b)

GIS Maps:

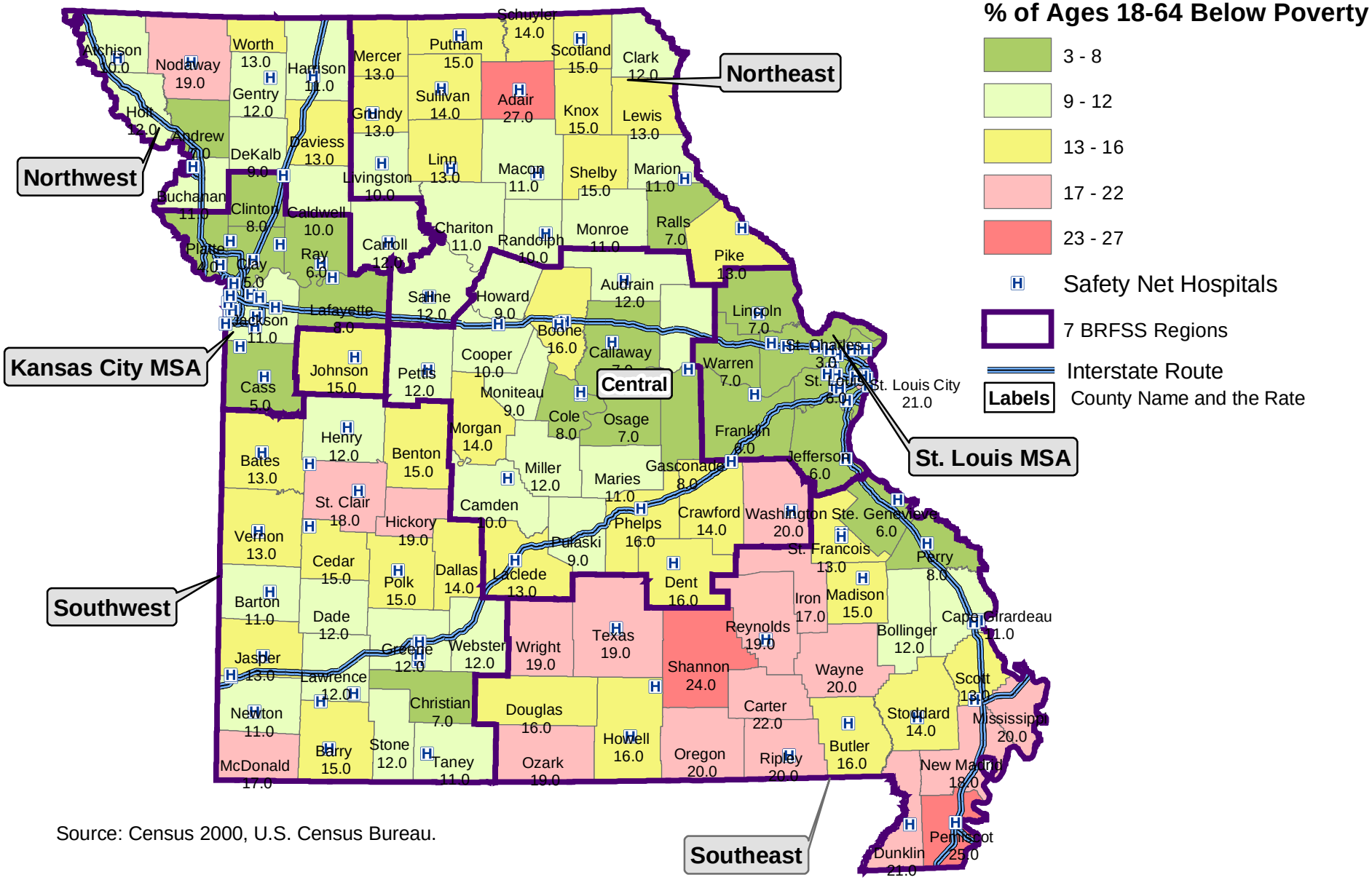
Percent of Missourians Below Poverty
(Different Age Groups)
by Missouri Counties

Percent Under Age 18 Below Poverty Level by Missouri Counties, 2000



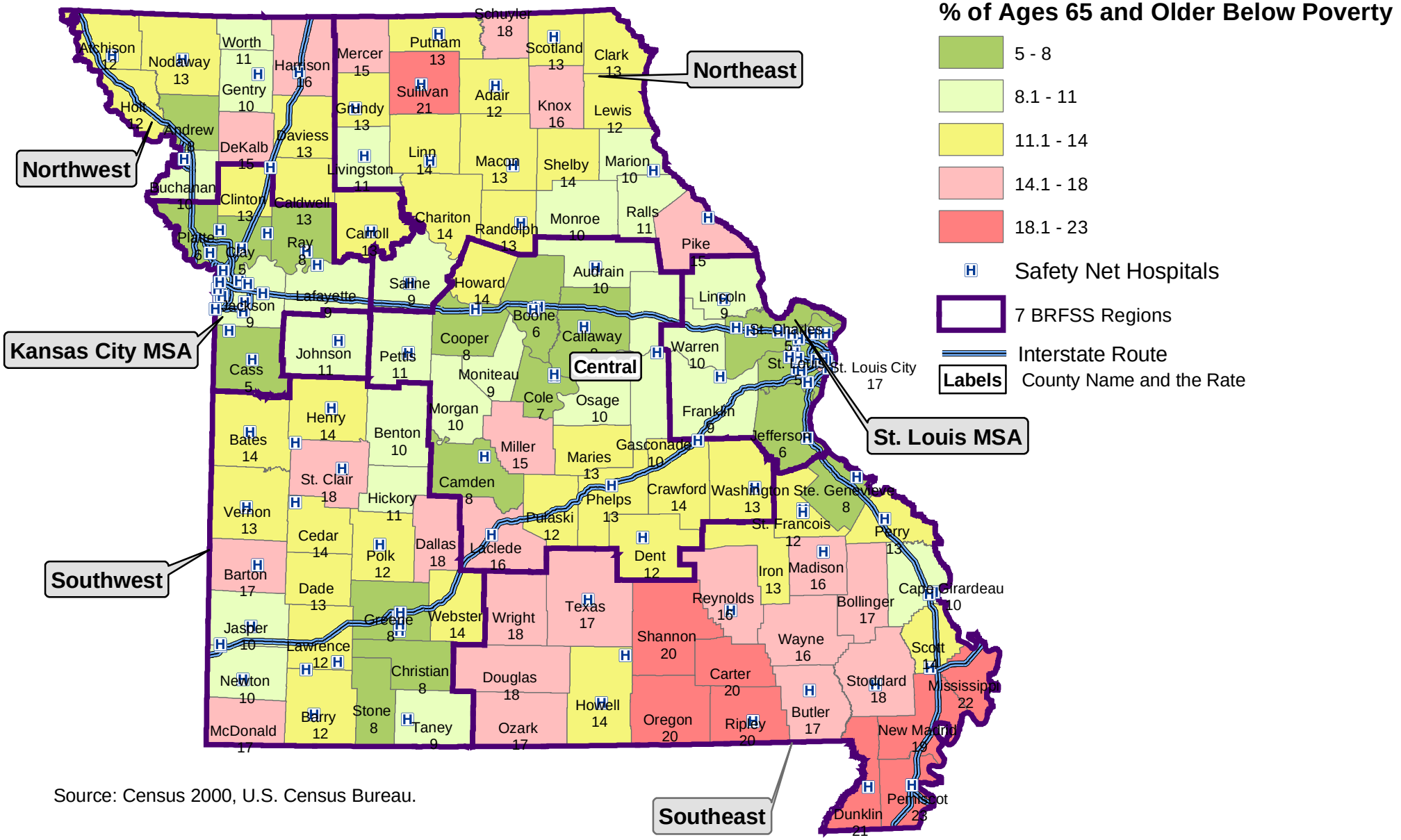
Source: Census 2000, U.S. Census Bureau.

Percent of Persons Ages 18-64 Below Poverty by Missouri Counties, 2000



Source: Census 2000, U.S. Census Bureau.

Percent of Persons Ages 65 and Older Below Poverty by Missouri Counties, 2000



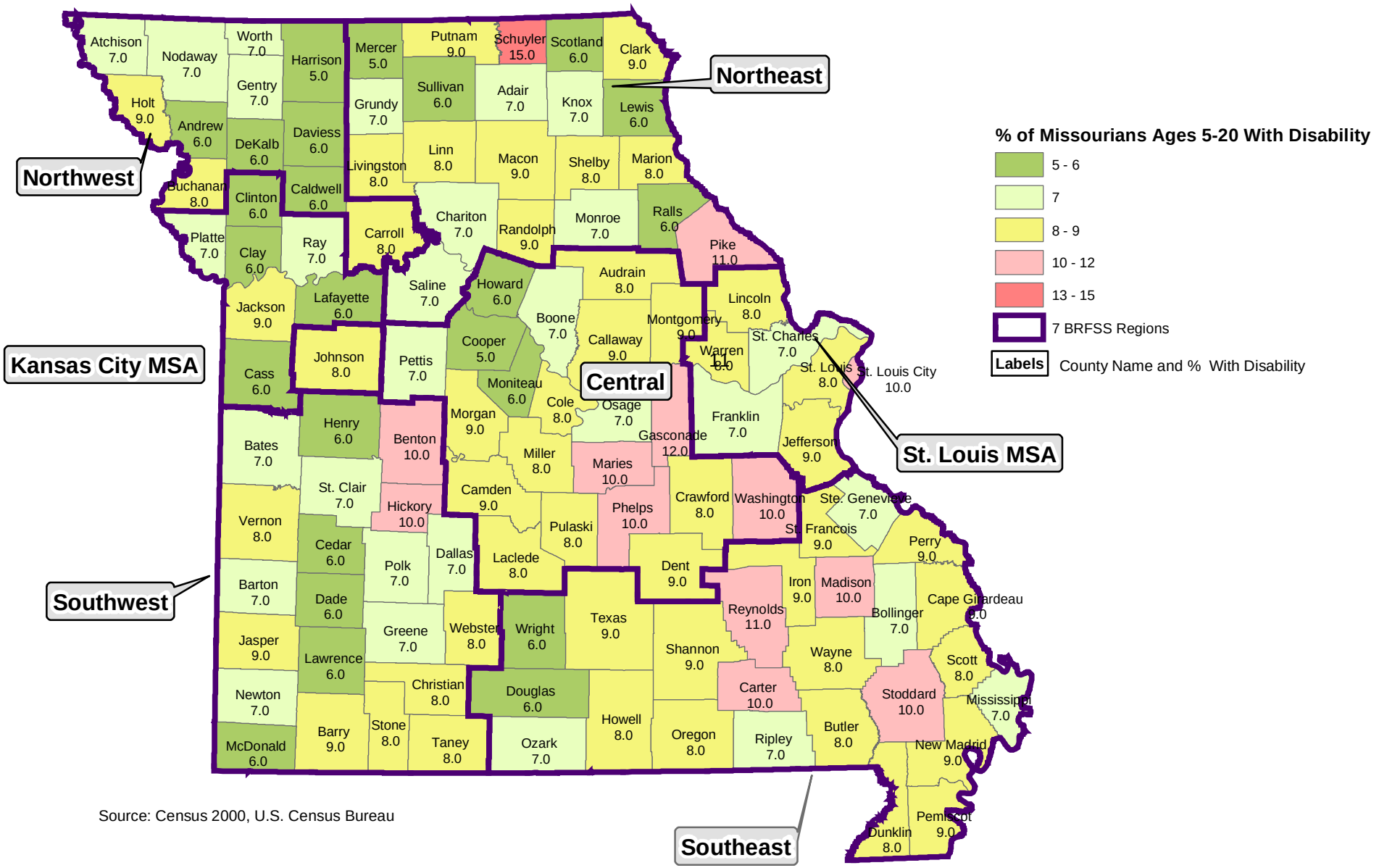
Source: Census 2000, U.S. Census Bureau.

Appendix - 1(c)

GIS Maps:

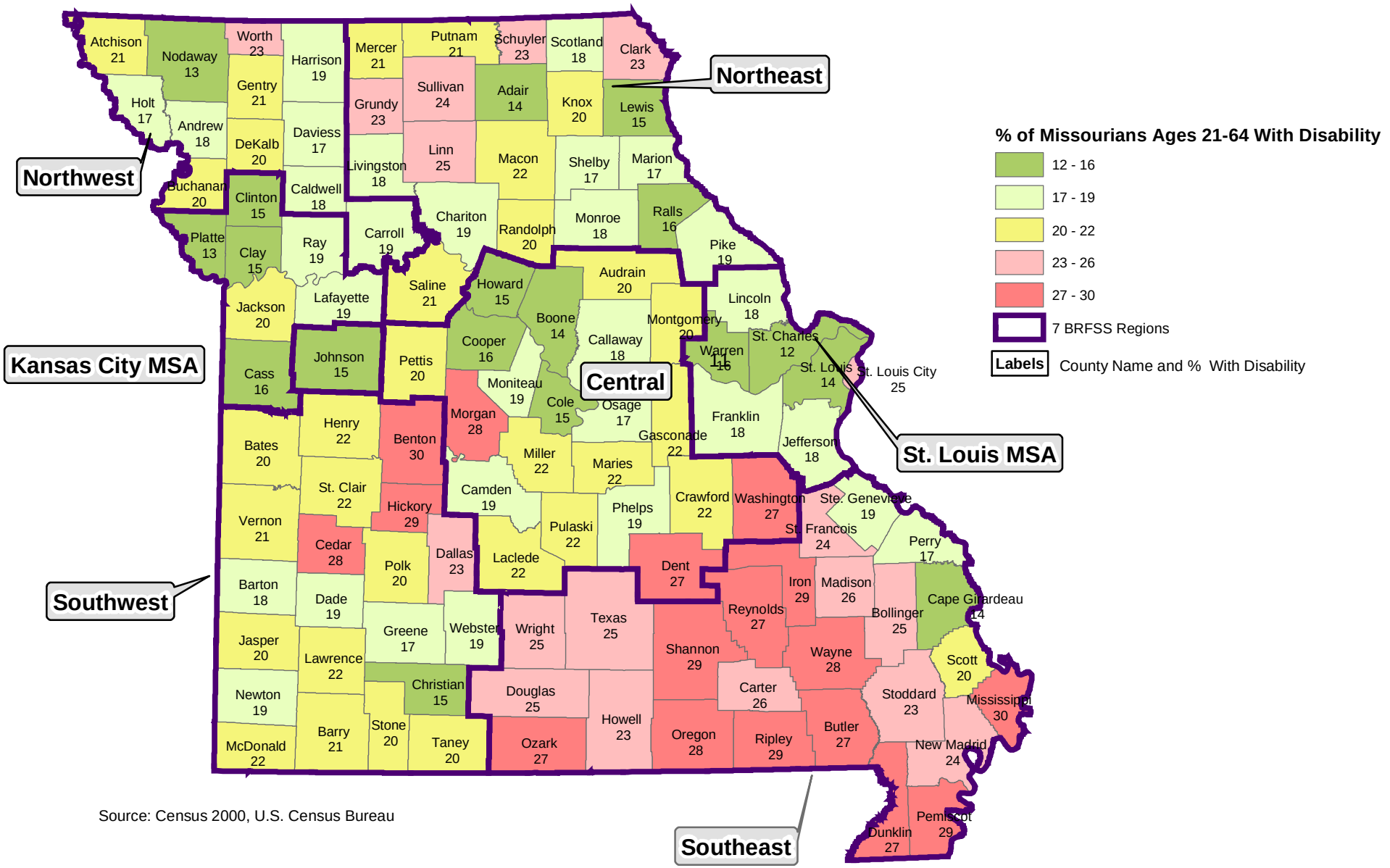
Percent of Missourians With Disability
(Different Age Groups)
by Missouri Counties

Percent of Missourians Ages 5-20 With Disability by Missouri Counties, 2000



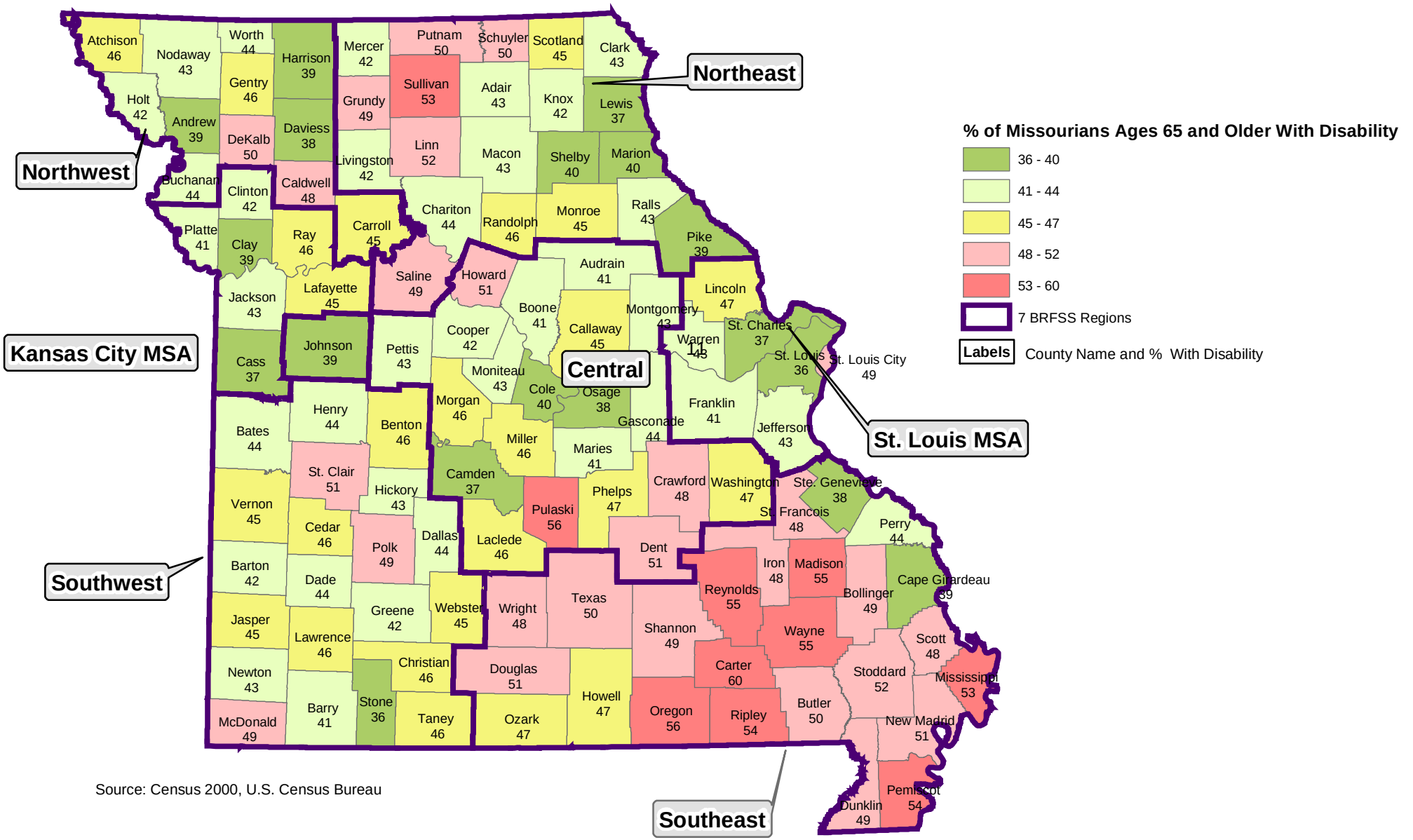
Source: Census 2000, U.S. Census Bureau

Percent of Missourians Ages 21-64 With Disability by Missouri Counties, 2000



Source: Census 2000, U.S. Census Bureau

Percent of Missourians Ages 65 and Older With Disability by Missouri Counties, 2000



Source: Census 2000, U.S. Census Bureau

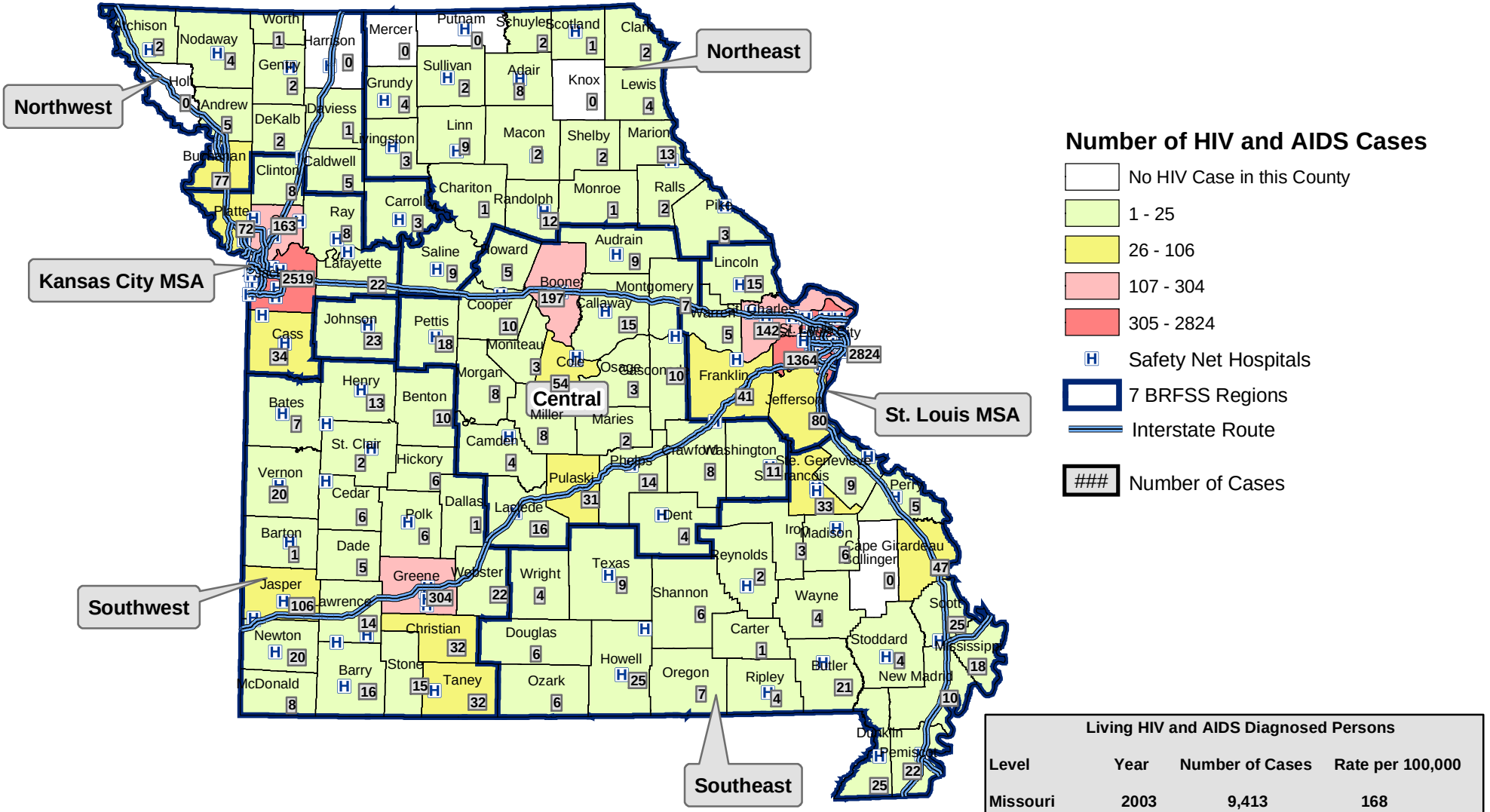
Appendix - 1(d)

GIS Maps:

Living HIV and AIDS Diagnosed Persons by Missouri Counties

(Number and Rate per 100,000)

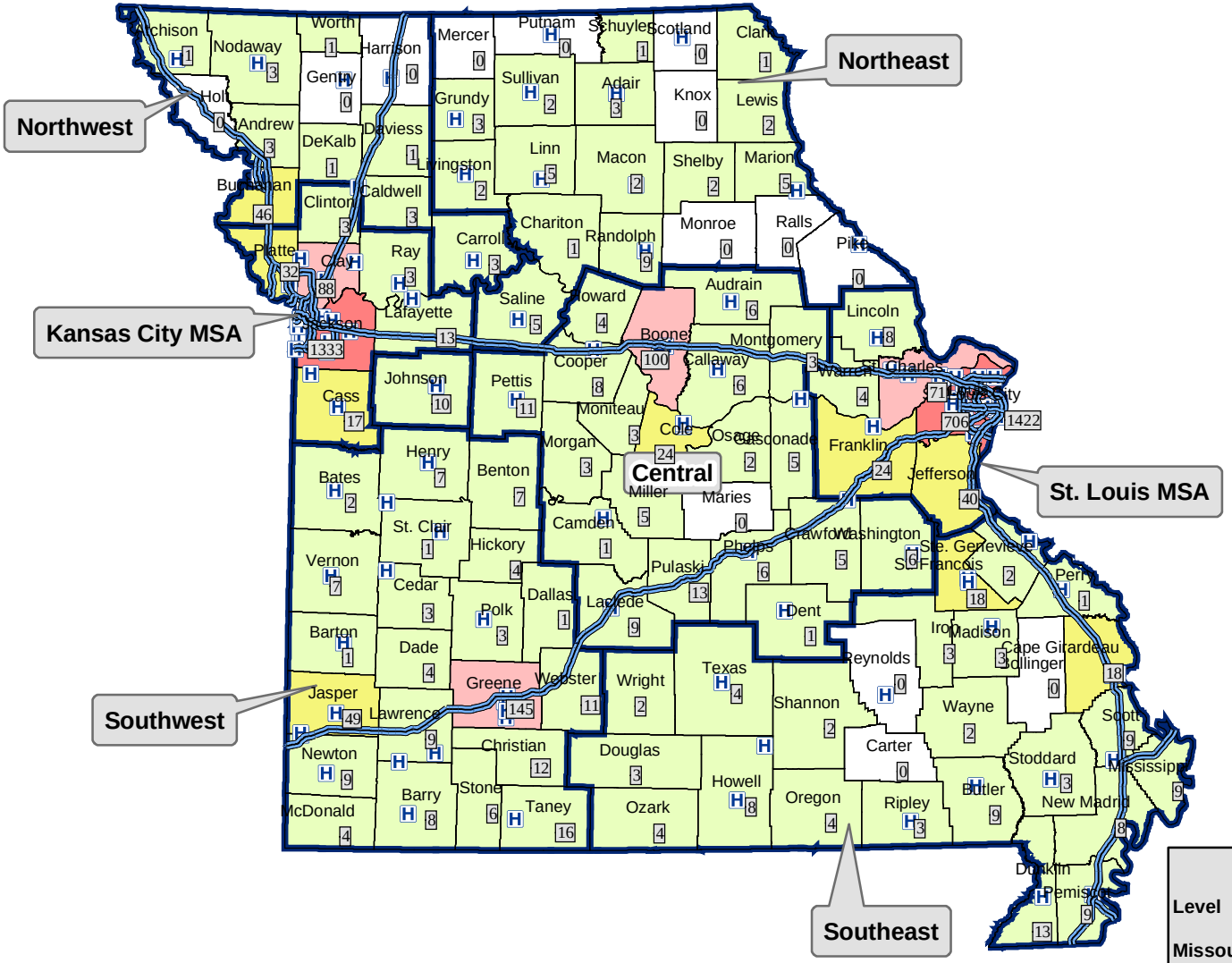
Number of Living HIV and AIDS Diagnosed Persons by Missouri Counties, 2003



Living HIV and AIDS Diagnosed Persons			
Level	**Year**	**Number of Cases**	**Rate per 100,000**
Missouri	**2003**	**9,413**	**168**
United States*	**2003**	**351,614**	**212**

*** This estimate is based on the data from the 33 states only.**

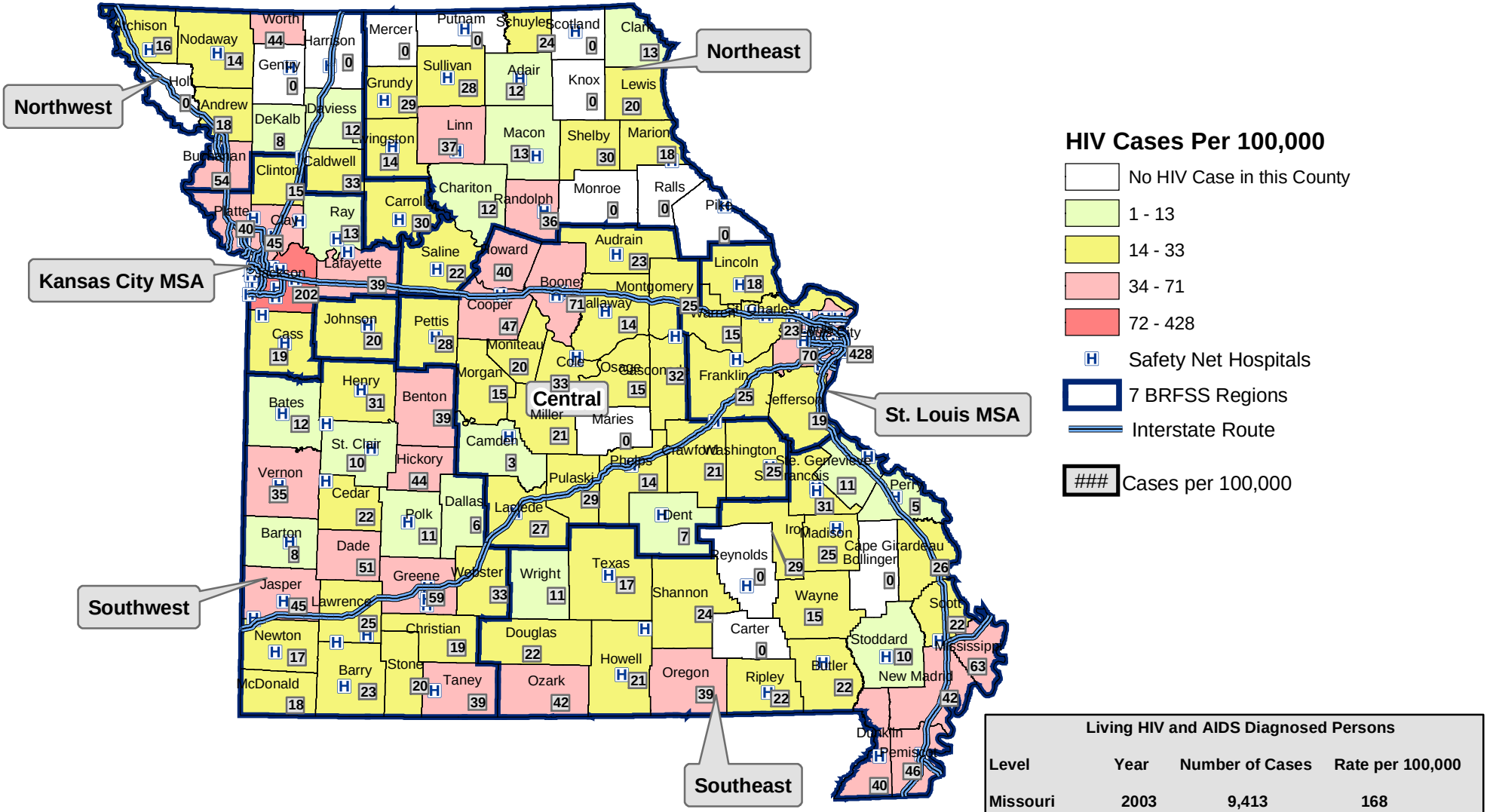
Number of Living HIV Diagnosed Persons by Missouri Counties, 2003



Living HIV and AIDS Diagnosed Persons			
Level	**Year**	**Number of Cases**	**Rate per 100,000**
Missouri	**2003**	**9,413**	**168**
United States*	**2003**	**351,614**	**212**

*** This estimate is based on the data from the 33 states only.**

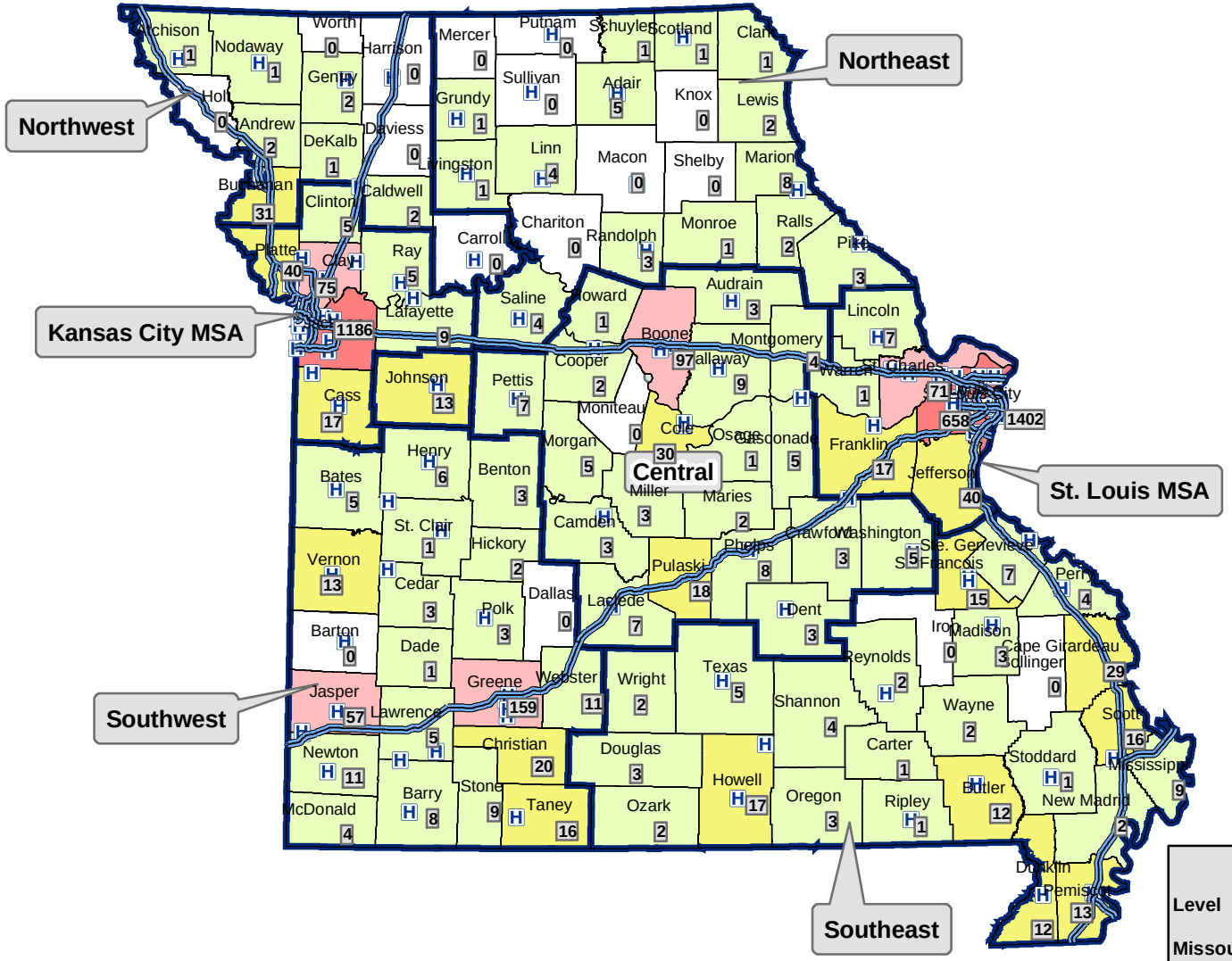
Living HIV Diagnosed Persons: Rate per 100,000 by Missouri Counties, 2003



Living HIV and AIDS Diagnosed Persons			
Level	**Year**	**Number of Cases**	**Rate per 100,000**
Missouri	**2003**	**9,413**	**168**
United States*	**2003**	**351,614**	**212**

*** This estimate is based on the data from the 33 states only.**

Number of Living AIDS Diagnosed Persons by Missouri Counties, 2003



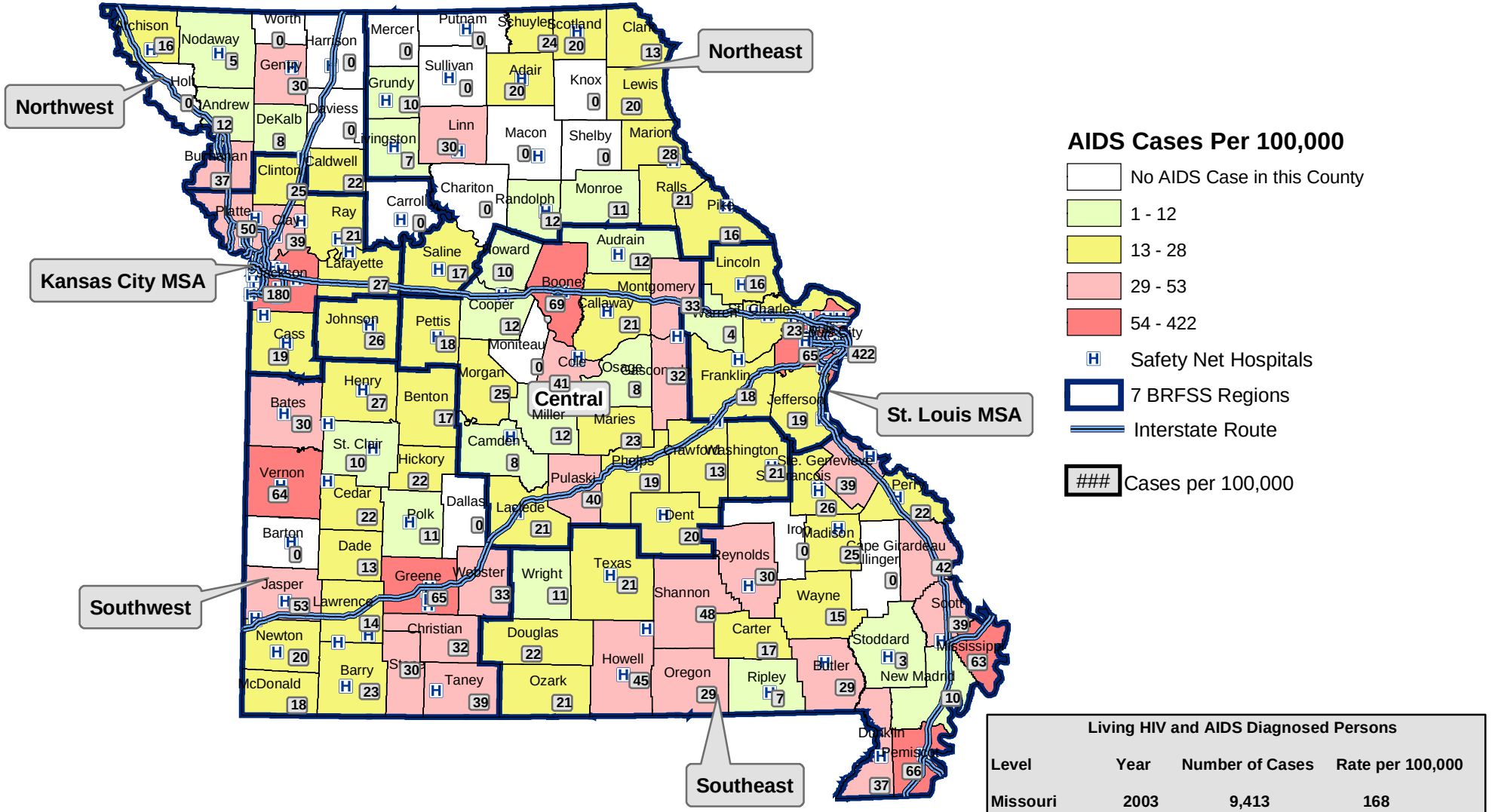
Number of AIDS Cases

- No AIDS Case in this County
- 1 - 11
- 12 - 40
- 41 - 159
- 160 - 1402
- H Safety Net Hospitals
- 7 BRFSS Regions
- Interstate Route
- ### Number of Cases

Living HIV and AIDS Diagnosed Persons			
Level	**Year**	**Number of Cases**	**Rate per 100,000**
Missouri	**2003**	**9,413**	**168**
United States*	**2003**	**351,614**	**212**

*** This estimate is based on the data from the 33 states only.**

Living AIDS Diagnosed Persons: Rate per 100,000 by Missouri Counties, 2003



Living HIV and AIDS Diagnosed Persons			
Level	**Year**	**Number of Cases**	**Rate per 100,000**
Missouri	**2003**	**9,413**	**168**
United States*	**2003**	**351,614**	**212**

*** This estimate is based on the data from the 33 states only.**

Appendix - 1(e)

Demand for Safety Net

(Ranking of Missouri Counties)

Note: All 115 counties of Missouri are ranked by most to least need of attention. Color-coding is based on quintile ranking.

Demand for Safety Net

(Counties By Composite and Individual Ranks)

	County Name	% Below Poverty	% With Disability (Ages 21-64)	Density of Uninsured and Medicaid Enrollees	Composite Demand
1	St. Louis City	112	111	115	338
2	Pemiscot	115	93	97	305
3	Washington	101	106	78	285
4	Dunklin	111	62	101	274
5	Stoddard	84	107	81	272
6	St. Francois	66	99	106	271
7	Phelps	81	104	80	265
8	Butler	94	65	99	258
9	New Madrid	108	89	61	258
10	Howell	95	75	82	252
11	Scott	75	72	104	251
12	Jasper	61	81	107	249
13	Texas	102	94	52	248
14	Hickory	98	109	40	247
15	Shannon	114	101	30	245
16	Madison	89	110	43	242
17	Morgan	77	86	79	242
18	Barry	85	88	68	241
19	Carter	113	105	23	241
20	Pike	71	113	55	239
21	Mississippi	110	53	75	238
22	Wayne	105	77	54	236
23	Benton	72	103	59	234
24	Iron	96	85	50	231
25	Jackson	34	84	113	231
26	Ripley	106	47	76	229
27	Schuyler	87	115	27	229
28	Stone	44	80	102	226
29	Buchanan	39	74	110	223
30	Oregon	107	79	35	221
31	Reynolds	99	112	8	219
32	Randolph	42	90	86	218
33	Boone	62	49	105	216
34	Camden	27	97	90	214
35	Dent	88	92	33	213
36	Audrain	65	76	71	212
37	Cape Girardeau	26	83	103	212
38	Marion	38	78	95	211
39	Crawford	80	60	70	210

Demand for Safety Net

(Counties By Composite and Individual Ranks)

	County Name	% Below Poverty	% With Disability (Ages 21-64)	Density of Uninsured and Medicaid Enrollees	Composite Demand
40	Jefferson	5	95	109	209
41	Polk	78	43	88	209
42	McDonald	100	24	77	201
43	Adair	109	25	65	199
44	Laclede	58	54	87	199
45	Johnson	67	57	74	198
46	Webster	64	69	62	195
47	Miller	57	63	73	193
48	Putnam	74	100	19	193
49	Dallas	92	31	69	192
50	Taney	40	55	94	189
51	Greene	37	36	112	185
52	Maries	48	108	29	185
53	St. Louis	7	64	114	185
54	Vernon	69	66	49	184
55	Gasconade	21	114	48	183
56	Christian	19	61	100	180
57	Cole	16	68	96	180
58	Wright	104	8	67	179
59	Perry	18	102	58	178
60	Callaway	13	91	72	176
61	Newton	31	44	98	173
62	Macon	43	96	31	170
63	Shelby	79	71	15	165
64	Lincoln	11	70	83	164
65	Pettis	45	29	89	163
66	Pulaski	23	56	84	163
67	Lawrence	56	14	92	162
68	Cedar	90	18	53	161
69	Linn	68	59	34	161
70	Clark	55	82	22	159
71	Montgomery	32	98	24	154
72	Bates	63	45	45	153
73	Bollinger	54	52	46	152
74	Livingston	41	58	51	150
75	Grundy	73	37	38	148
76	Knox	93	46	9	148
77	St. Charles	1	39	108	148
78	Carroll	53	73	20	146

Demand for Safety Net

(Counties By Composite and Individual Ranks)

	County Name	% Below Poverty	% With Disability (Ages 21-64)	Density of Uninsured and Medicaid Enrollees	Composite Demand
79	Ozark	103	26	16	145
80	St. Clair	97	35	13	145
81	Nodaway	82	48	14	144
82	Saline	49	38	57	144
83	Warren	14	67	63	144
84	Henry	59	15	66	140
85	Douglas	91	11	37	139
86	Clay	3	22	111	136
87	Holt	46	87	2	135
88	Franklin	8	32	93	133
89	Platte	2	40	85	127
90	Lewis	76	12	36	124
91	Barton	47	28	41	116
92	Sullivan	83	23	10	116
93	Cass	4	19	91	114
94	Ray	6	51	47	104
95	Ste. Genevieve	9	50	42	101
96	Scotland	86	7	6	99
97	Lafayette	17	16	64	97
98	Moniteau	22	13	60	95
99	Daviess	70	9	12	91
100	Worth	60	27	3	90
101	Howard	28	20	39	87
102	Dade	51	4	28	83
103	Clinton	20	6	56	82
104	Gentry	36	41	4	81
105	Monroe	35	33	11	79
106	Chariton	29	42	5	76
107	Andrew	10	21	44	75
108	Atchison	30	34	7	71
109	Harrison	52	1	17	70
110	DeKalb	25	17	26	68
111	Caldwell	33	5	25	63
112	Osage	12	30	21	63
113	Cooper	24	2	32	58
114	Mercer	50	3	1	54
115	Ralls	15	10	18	43

Source: Computation of these ranks is based on data from Census 2000, Missouri Department of Social Services, and HICAS 2004
Note: 1- Missouri counties, with individual and composite ranking, by greater demand on health care safety net
2- Color-coding shows the quintile grouping

Appendix – 2(a)

Growth in Medicaid Enrollments by Missouri Counties, 1997-2000

Medicaid Enrollment Growth by Missouri Counties, 1998-2003

Region/County	% Growth 1998-2003	Region/County	% Growth 1998-2003	Region/County	% Growth 1998-2003
Kansas City Metro	**73**	**Northeastern Missouri**	**78**	**Southeastern Missouri**	**64**
Cass	124	Adair	94	Bollinger	74
Clay	141	Chariton	45	Butler	66
Clinton	83	Clark	49	Cape Girardeau	122
Jackson	61	Grundy	78	Carter	55
Lafayette	95	Knox	63	Douglas	68
Platte	150	Lewis	82	Dunklin	50
Ray	87	Linn	66	Howell	76
St. Louis Metro	**49**	Livingston	79	Iron	54
Franklin	102	Macon	79	Madison	101
Jefferson	92	Marion	70	Mississippi	28
Lincoln	129	Mercer	61	New Madrid	43
St. Charles	96	Monroe	92	Oregon	61
St. Louis City	110	Pike	102	Ozark	64
St. Louis County	72	Putnam	76	Pemiscot	31
Warren	17	Ralls	77	Perry	87
Central Missouri	**86**	Randolph	84	Reynolds	60
Audrain	65	Saline	81	Ripley	71
Boone	84	Schuyler	76	Scott	64
Callaway	82	Scotland	55	Shannon	68
Camden	124	Shelby	91	St. Francois	58
Cole	86	Sullivan	61	Ste. Genevieve	81
Cooper	98	**Northwestern Missouri**	**62**	Stoddard	73
Crawford	75	Andrew	83	Texas	76
Dent	79	Atchison	56	Wayne	69
Gasconade	83	Buchanan	49	Wright	67
Howard	71	Caldwell	73	**Southwestern Missouri**	**96**
Laclede	108	Carroll	73	Barry	91
Maries	67	Daviess	104	Barton	106
Miller	89	De Kalb	61	Bates	94
Moniteau	121	Gentry	68	Benton	88
Montgomery	86	Harrison	72	Cedar	79
Morgan	107	Holt	57	Christian	137
Osage	113	Johnson	74	Dade	60
Pettis	78	Nodaway	62	Dallas	93
Phelps	105	Worth	57	Greene	86
Pulaski	78			Henry	70
Washington	49			Hickory	78
				Jasper	100
				Lawrence	96
				McDonald	70
Missouri	**67**			Newton	94
				Polk	108
				St. Clair	81
				Stone	123
				Taney	140
				Vernon	83
				Webster	128

Source: Missouri Department of Health and Senior Services.

Appendix – 2(b)

Disproportionate Share Hospital Funds (DSH)
Received by Missouri Hospitals in 2001

Missouri Total DSH Payments in Dollars, FFY 2001		
County	**Hospital Name**	**DSH Payment FFY 2001**
Missouri		$455,068,490
Adair	Northeast Regional Med Ctr	$1,113,987
Atchison	Community Hospital ASSN - Fairfax	$148,060
Audrain	Audrain Medical Center	$1,194,550
Barry		$1,020,850
	Cox Monett Hospital	$579,404
	South Barry Co. Mem. Hospital	$441,446
Barton	Barton County Memorial Hosp	$402,802
Bates	Bates County Memorial Hosp	$423,515
Boone		$27,440,796
	Boone Hospital Center	$2,217,571
	Columbia Regional Hospital	$832,715
	Mid-Missouri Mental Health Ctr	$11,137,752
	Rusk Rehabilitation Ctr	$376,576
	University Hospitals & Clinics	$12,876,182
Buchanan		$20,651,650
	Heartland Regional Medical Center	$4,349,516
	Northwest Missouri Psychiatric	$16,302,134
Butler	Poplar Bluff Regional Medical Center	$2,197,575
Callaway		$40,052,952
	Callaway Community Hospital	$273,282
	Fulton State Hospital	$39,779,670
Camden	Lake Regional Health System	$1,610,503
Cape Girardeau		$5,983,448
	Saint Francis Medical Center	$2,676,621
	Southeast Missouri Hospital	$3,306,827
Carroll	Carroll Co Memorial Hospital	$60,888
Cass	Cass Medical Center	$581,224
Cedar	Cedar Co Memorial Hospital	$186,296
Clay		$6,619,982
	Excelsior Springs Medical Ctr	$318,807
	Liberty Hospital	$1,772,664
	North Kansas City Hospital	$3,270,817
	St Lukes Northland Hosp Smithville	$1,257,694
Clinton	Cameron Regional Medical Center Inc	$357,111

Missouri Total DSH Payments in Dollars, FFY 2001		
County	**Hospital Name**	**DSH Payment FFY 2001**
Cole		$3,050,327
	Capital Region Med Ctr Madison	$1,089,862
	St Marys Health Center	$1,960,465
Cooper	Cooper Co Mem Hospital	$239,626
Crawford	Missouri Baptist Hosp Of Sullivan	$686,566
Dent	Salem Memorial District Hosp	$332,406
Dunklin	Twin Rivers Regional Med Ctr	$747,215
Franklin	St. John's Mercy - Washington	$1,699,863
Gasconade	Hermann Area District Hosp	$90,607
Gentry	Gentry County Memorial Hospital	$108,335
Greene		$20,503,327
	Cox (Lester E) Medical Center	$8,694,235
	Doctors Hospital Of Springfield	$309,952
	Lakeland Regional Hospital	$687,944
	St Johns Regional Health Ctr	$10,811,196
Grundy	Wright Memorial Hospital	$289,531
Harrison	Harrison Co Community Hospital	$150,377
Henry	Royal Oaks Hospital	$378,309
Howell		$1,618,724
	Ozarks Medical Center	$1,396,944
	St. Francis Hospital - Mountain View	$221,780
Jackson		$105,209,844
	Baptist Lutheran Medical Center	$1,215,631
	Childrens Mercy Hospital	$10,640,373
	Crittenton Center	$122,940
	Hallmark Youthcare of KC	$44,451
	Independence Regional Hlth Ctr	$2,058,419
	Lees Summit Hospital	$457,830
	Medical Center Of Independence	$646,462
	Rehabilitation Institute	$347,995
	Research Medical Center	$5,150,929
	Research Psychiatric Center	$310,424
	St Joseph Hlth Ctr Of Kansas City	$2,678,118
	St Lukes Hospital Of Kansas City	$9,695,266
	St Marys Hosp Of Blue Springs	$715,696
	Trinity Lutheran Hospital	$1,734,935

Missouri Total DSH Payments in Dollars, FFY 2001		
County	**Hospital Name**	**DSH Payment FFY 2001**
	Truman Medical Center E	$9,460,054
	Truman Medical Center W	$25,943,094
	Two Rivers Psychiatric Hospital	$183,593
	Vencor Hospital KC	$123,783
	Western Mo Mental Hlth Ctr	$33,679,851
Jasper		$7,472,302
	Mccune-Brooks Hospital	$894,566
	St Johns Regional Medical Ctr	$6,577,736
Jefferson	Jefferson Memorial Hospital	$2,386,742
Johnson	Western Mo Medical Ctr	$782,790
Laclede	Breech Regional Medical Center	$617,317
Lafayette	Lafayette Regional Hlth Ctr	$344,248
Lawrence		$938,875
	Aurora Community Hospital	$536,943
	Missouri Rehabilitation Ctr	$401,932
Lincoln	Lincoln Co Mem Hospital	$349,345
Linn	Pershing Memorial Hospital	$252,207
Livingston	Hedrick Medical Center	$426,969
Macon	Macon County Samaritan Memorial Hosp	$210,881
Madison	Madison Medical Center	$264,892
Marion	Hannibal Regional Hospital	$979,795
Newton		$4,241,392
	Freeman Neosho Hospital	$648,299
	Freeman-Oak Hill Hlth System West	$3,593,093
Nodaway	St. Francis Hospital - Maryville	$327,666
Pemiscot	Pemiscot Memorial Health System	$795,752
Perry	Perry Co Memorial Hosp	$321,701
Pettis	Bothwell Regional Health Ctr	$1,319,914
Phelps	Phelps Co Reg Med Ctr	$2,963,046
Pike	Pike Co Memorial Hosp	$388,011
Polk	Citizens Memorial Hospital	$696,596
Putnam	Putnam Co Memorial Hosp	$62,955
Randolph	Moberly Reg Med Ctr	$534,917
Ray	Ray Co Memorial Hospital	$236,796
Reynolds	Reynolds Co General Mem Hospital	$143,430
Ripley	Ripley Co Memorial Hospital	$217,604

Missouri Total DSH Payments in Dollars, FFY 2001		
County	**Hospital Name**	**DSH Payment FFY 2001**
Saline	John Fitzgibbon Memorial Hospital	$615,593
Scotland	Scotland Co Mem Hospital	$140,625
Scott	Missouri Delta Medical Ctr	$2,162,516
St Charles		$4,208,650
	Barnes Jewish St Peters Hospital	$744,550
	Crossroads Regional Hospital	$653,561
	St Joseph Health Center	$2,057,819
	St Joseph Hospital West	$752,720
St Clair		$219,695
	Ellett Memorial Hospital	$34,832
	Sac-Osage Hospital	$184,863
St Francois		$24,408,317
	Mineral Area Regional Medical Ctr	$991,638
	Parkland Health Ctr Farmington	$955,972
	Southeast Mo Mental Health Ctr	$22,460,707
St Louis City		$119,631,550
	Barnes-Jewish Hospital	$14,628,579
	Cardinal Glennon Childrens Hospital	$4,251,910
	Forest Park Hospital	$3,538,262
	Hawthorn Childrens Psych Hosp	$3,965,660
	Metro St Louis Psychiatric Ctr	$25,281,043
	Southpointe Hospital	$1,213,038
	St Alexius Hospital	$1,540,132
	St Louis Childrens Hospital	$5,803,080
	St Louis Connectcare	$26,458,723
	St Louis Psych Rehab Ctr	$23,883,104
	St Louis University Hospital	$8,869,200
	Vencor Hospital St. Louis	$198,819
St Louis County		$25,756,857
	All Saints Special Care Ctr	$137,756
	Barnes-Jewish West Co Hospital	$393,982
	Christian Hospital Northeast	$3,608,781
	Christian Hospital Northwest	$3,116,982
	Depaul Health Center	$3,555,510
	Des Peres Hospital	$1,062,211
	Missouri Baptist Medical Ctr	$1,630,404

Missouri Total DSH Payments in Dollars, FFY 2001		
County	**Hospital Name**	**DSH Payment FFY 2001**
	St Anthonys Medical Center	$4,222,593
	St Johns Mercy Med Center	$5,607,887
	St Joseph Hosp Of Kirkwood	$569,036
	St Lukes Hospital	$1,851,715
St. Francois	Park Lane Medical Center	($169,377)
Ste Genevieve	Ste Genevieve Co Mem Hosp	$256,345
Stoddard	Dexter Memorial Hospital	$412,801
Sullivan	Sullivan Co Mem Hospital	$90,887
Taney	Skaggs Community Health Ctr	$2,014,435
Texas	Texas Co Memorial Hospital	$578,979
Vernon		$665,841
	Heartland Behavioral Hlth Serv	$69,587
	Nevada Regional Medical Ctr	$596,254
Washington	Washington Co Mem Hosp	$396,438
	SSM Rehabilitation	$392,235

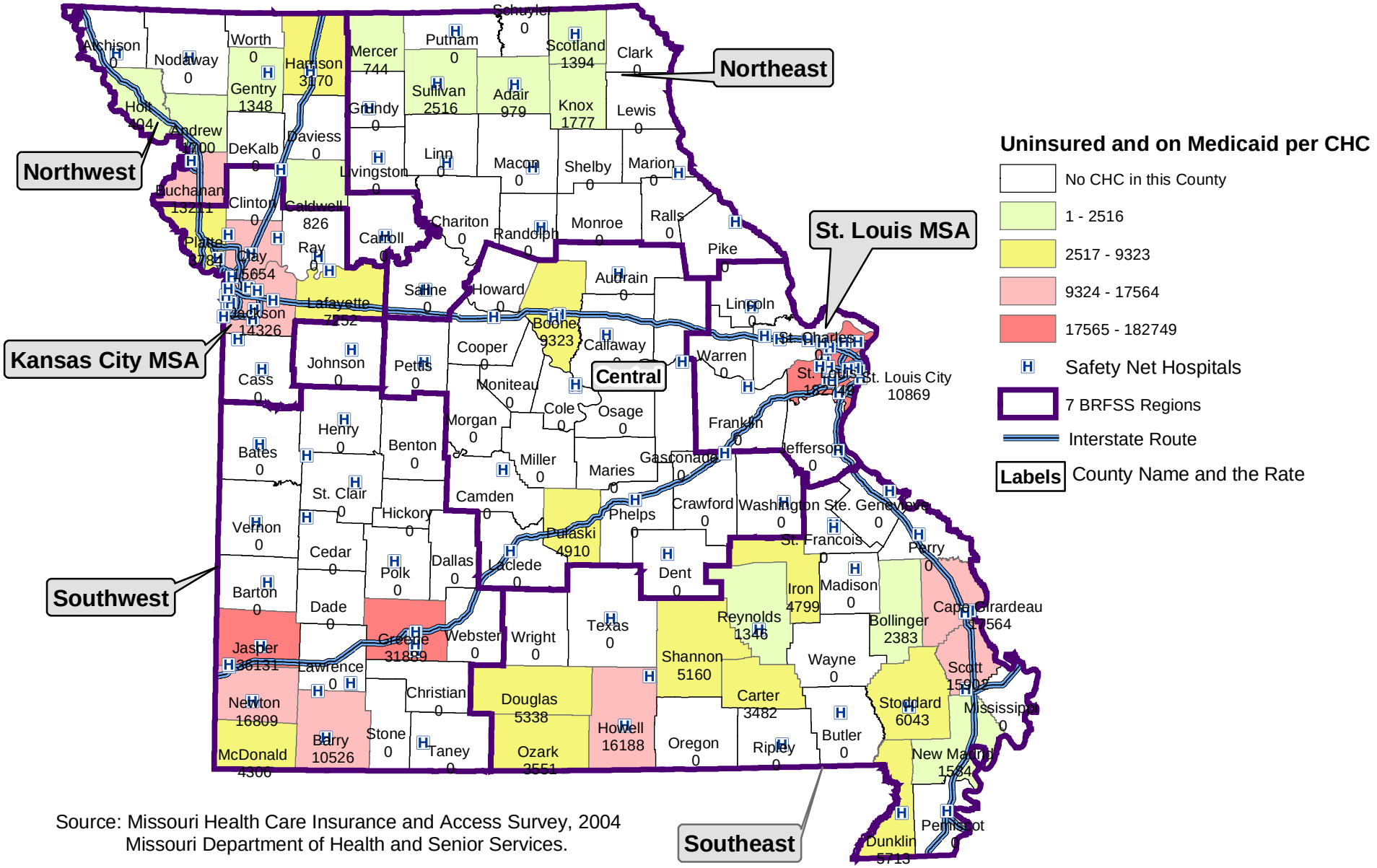
Source: Center for Medicare & Medicaid Services, 2001

Appendix – 2(c)

GIS Maps:

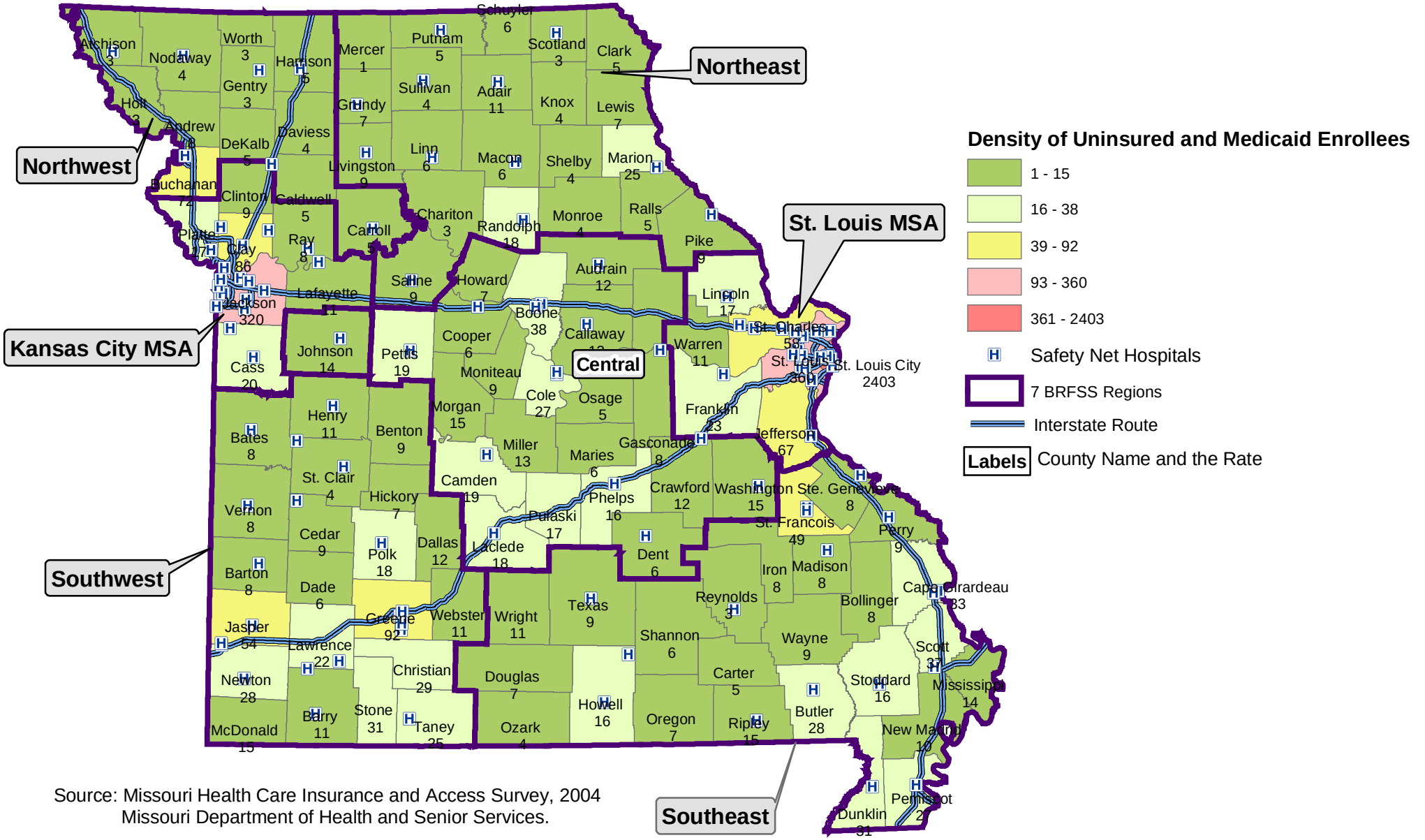
Vulnerable Population and its Density
by Missouri Counties

Number of Uninsured and Medicaid Enrollees per CHC by Missouri Counties, 2004



Source: Missouri Health Care Insurance and Access Survey, 2004
Missouri Department of Health and Senior Services.

Population Density of Uninsured and Medicaid Enrollees by Missouri Counties, 2004



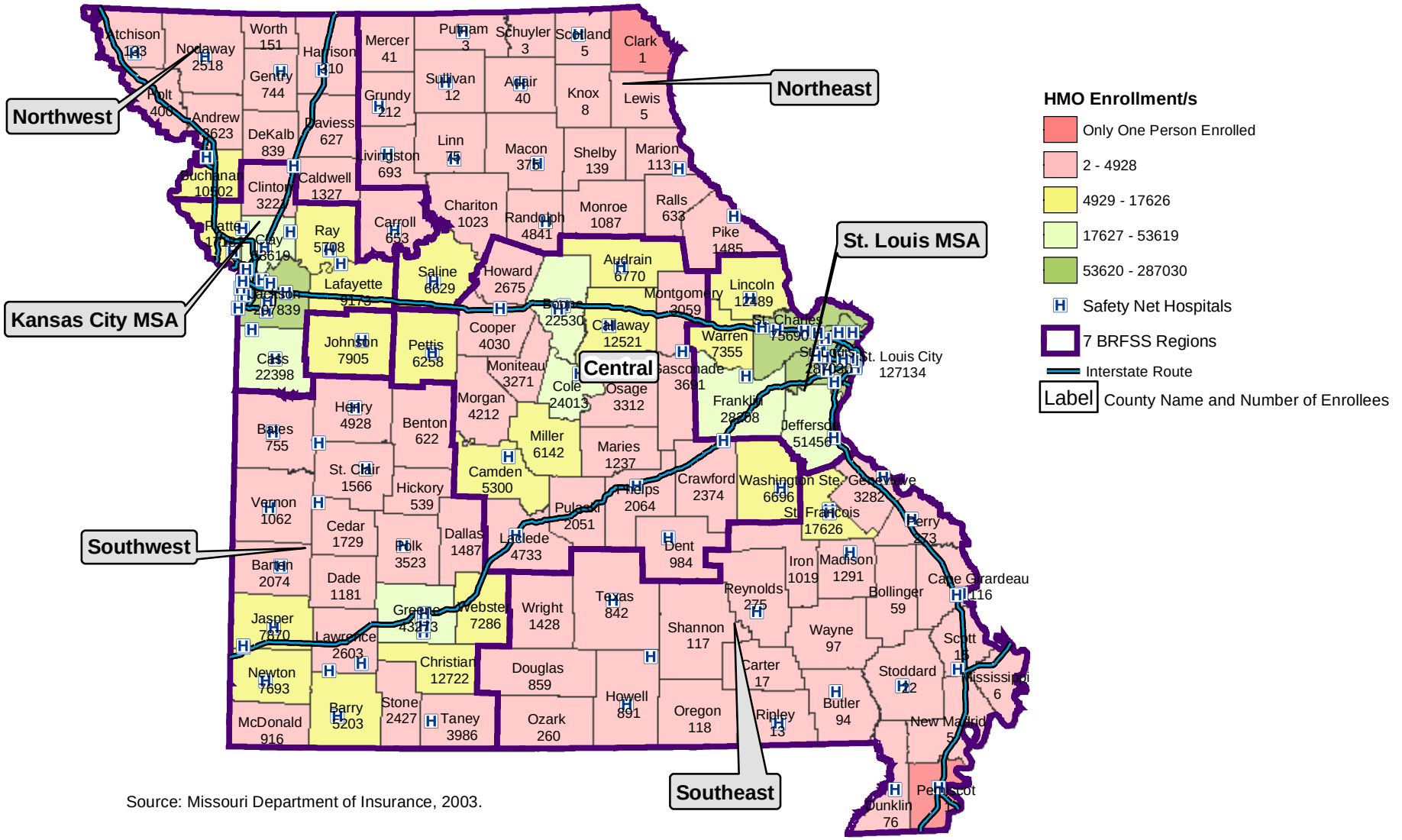
Source: Missouri Health Care Insurance and Access Survey, 2004
Missouri Department of Health and Senior Services.

Appendix - 3(a)

GIS Maps:

The Numbers of HMOs and their Enrollments by Missouri Counties

Number of Missourians Enrolled With HMOs by Missouri Counties, 2003



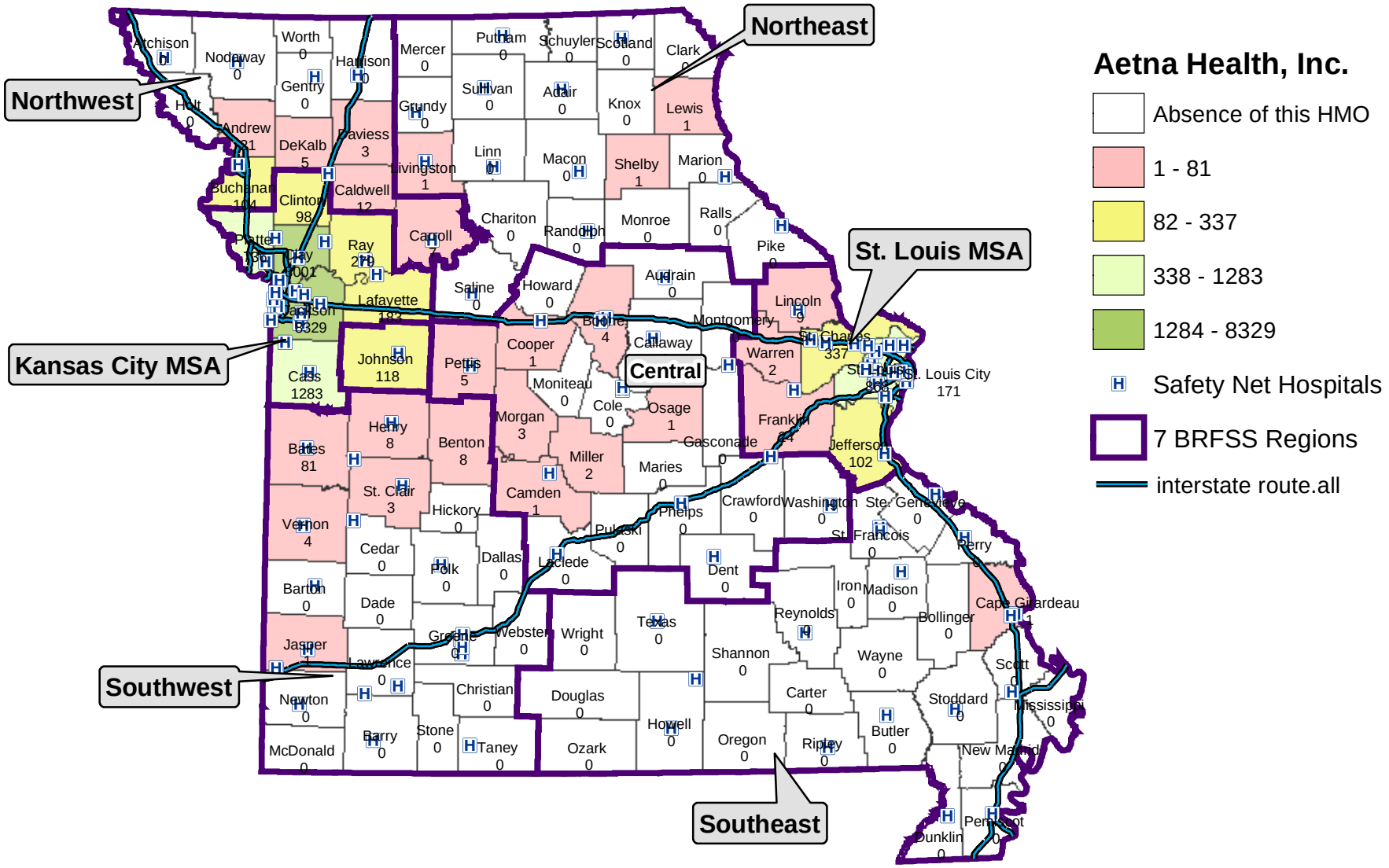
Source: Missouri Department of Insurance, 2003.

Appendix - 3(b)

GIS Maps:

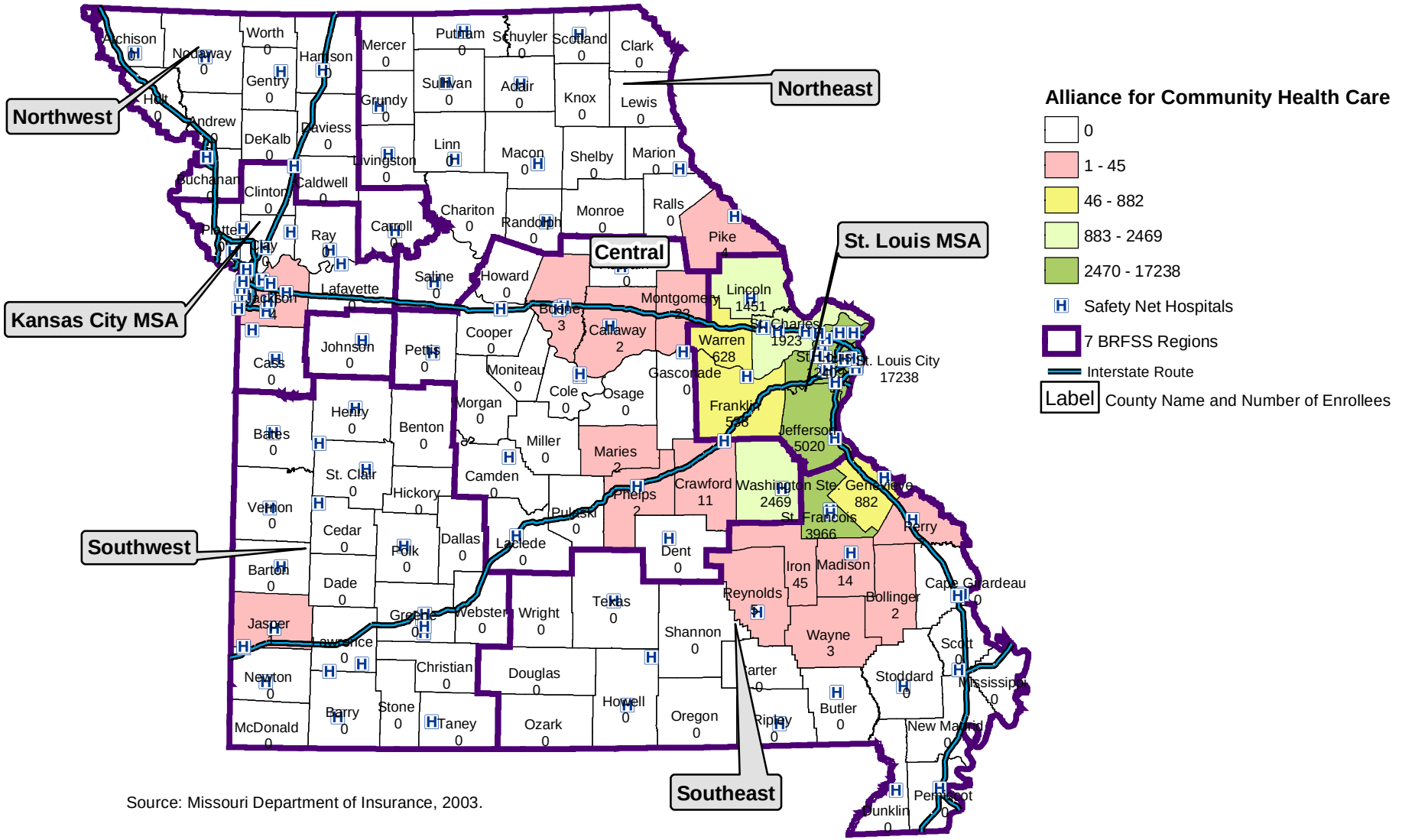
Presence of Individual HMOs by Missouri Counties

Presence of Aetna, Inc.
by Missouri Counties, 2003



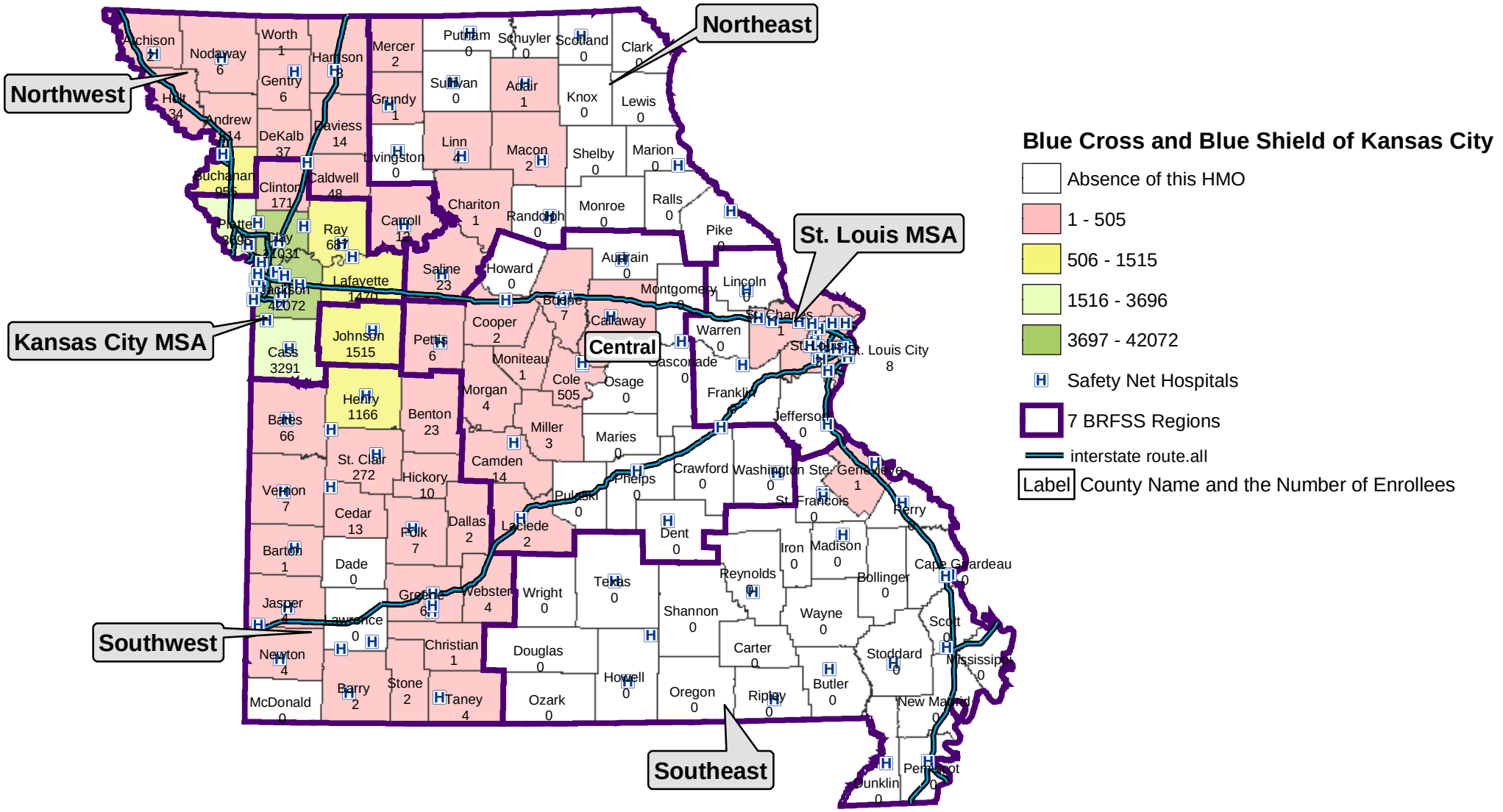
Source: Missouri Department of Insurance, 2003.

Presence of Alliance for Comunity Health Care by Missouri Counties, 2003



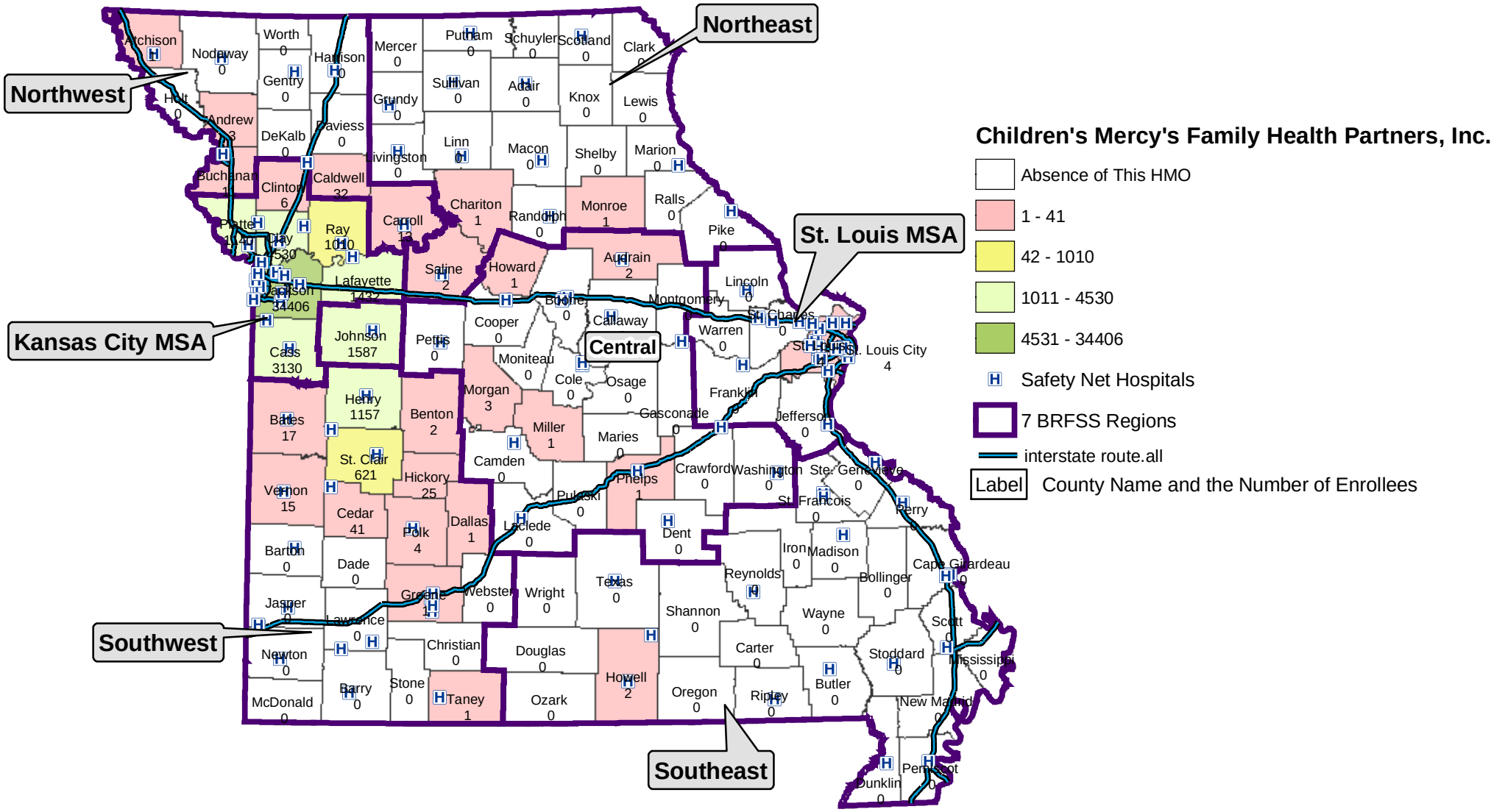
Source: Missouri Department of Insurance, 2003.

Presence of Blue Cross and Blue Shield of Kansas City by Missouri Counties, 2003



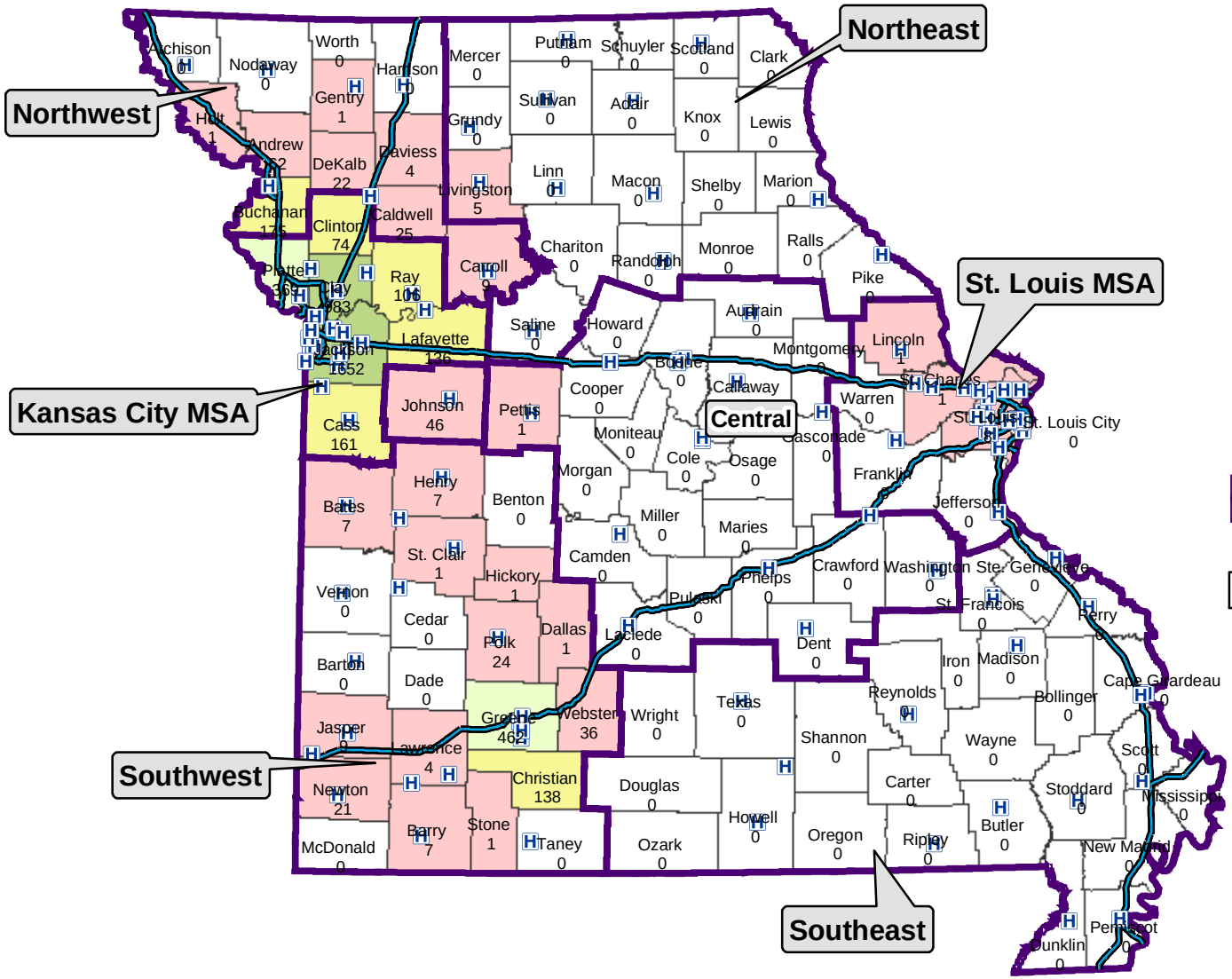
Source: Missouri Department of Insurance, 2003.

Presence of Children's Mercy's Family Health Partners, Inc. by Missouri Counties, 2003



Source: Missouri Department of Insurance, 2003.

Presence of CIGNA Healthcare of Ohio, Inc. by Missouri Counties, 2003

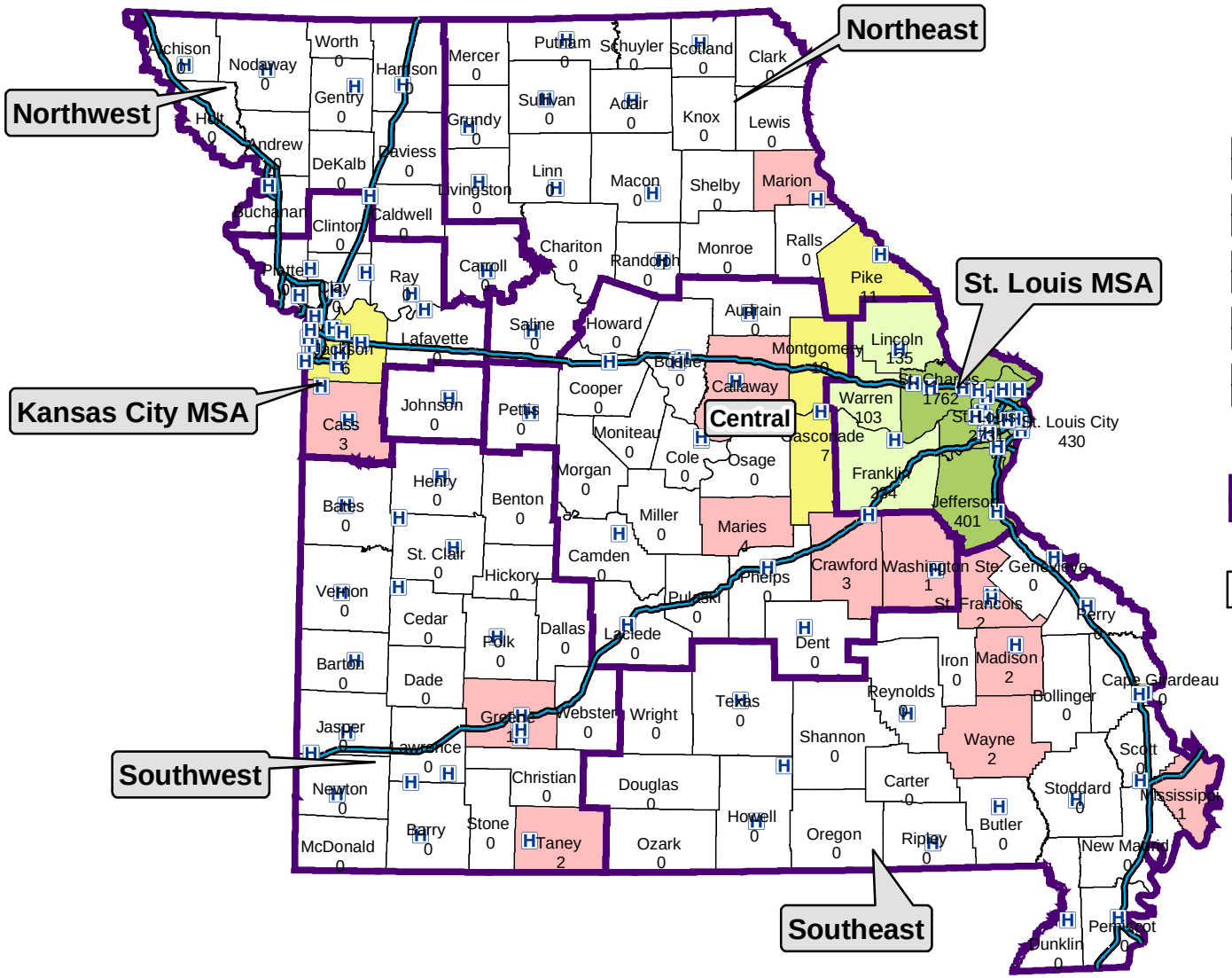


CIGNA Healthcare of Ohio, Inc.

- Absence of this HMO
- 1 - 62
- 63 - 175
- 176 - 462
- 463 - 1652
- Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label: County Name and the Number of Enrollees

Source: Missouri Department of Insurance, 2003.

Presence of CIGNA Healthcare of St. Louis, Inc. by Missouri Counties, 2003

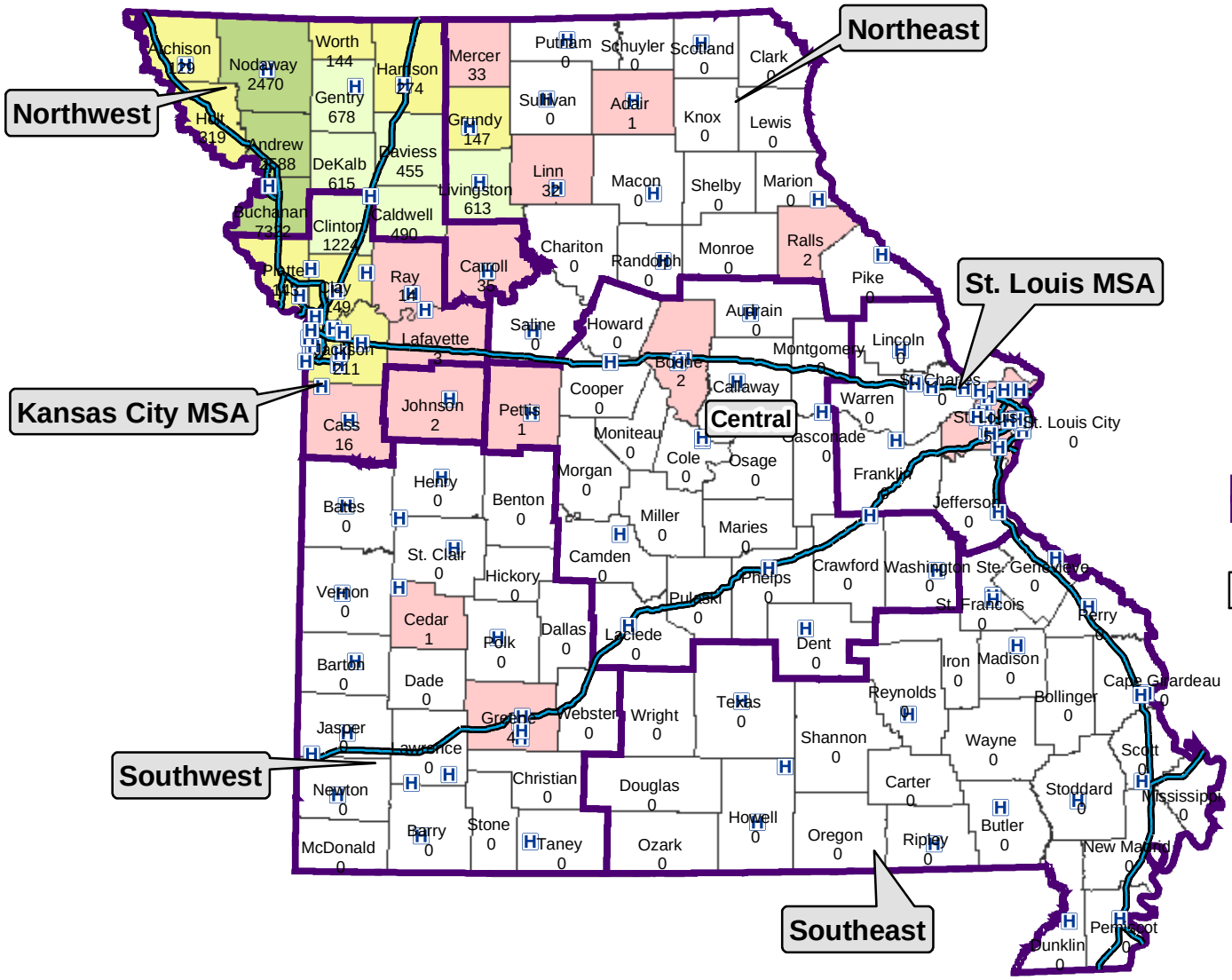


CIGNA Healthcare of St. Louis, Inc.

- Absence of this HMO
- 1 - 4
- 5 - 11
- 12 - 234
- 235 - 2731
- H Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label County Name and the Number of Enrollees

Source: Missouri Department of Insurance, 2003.

Presence of Community Health Plan by Missouri Counties, 2003

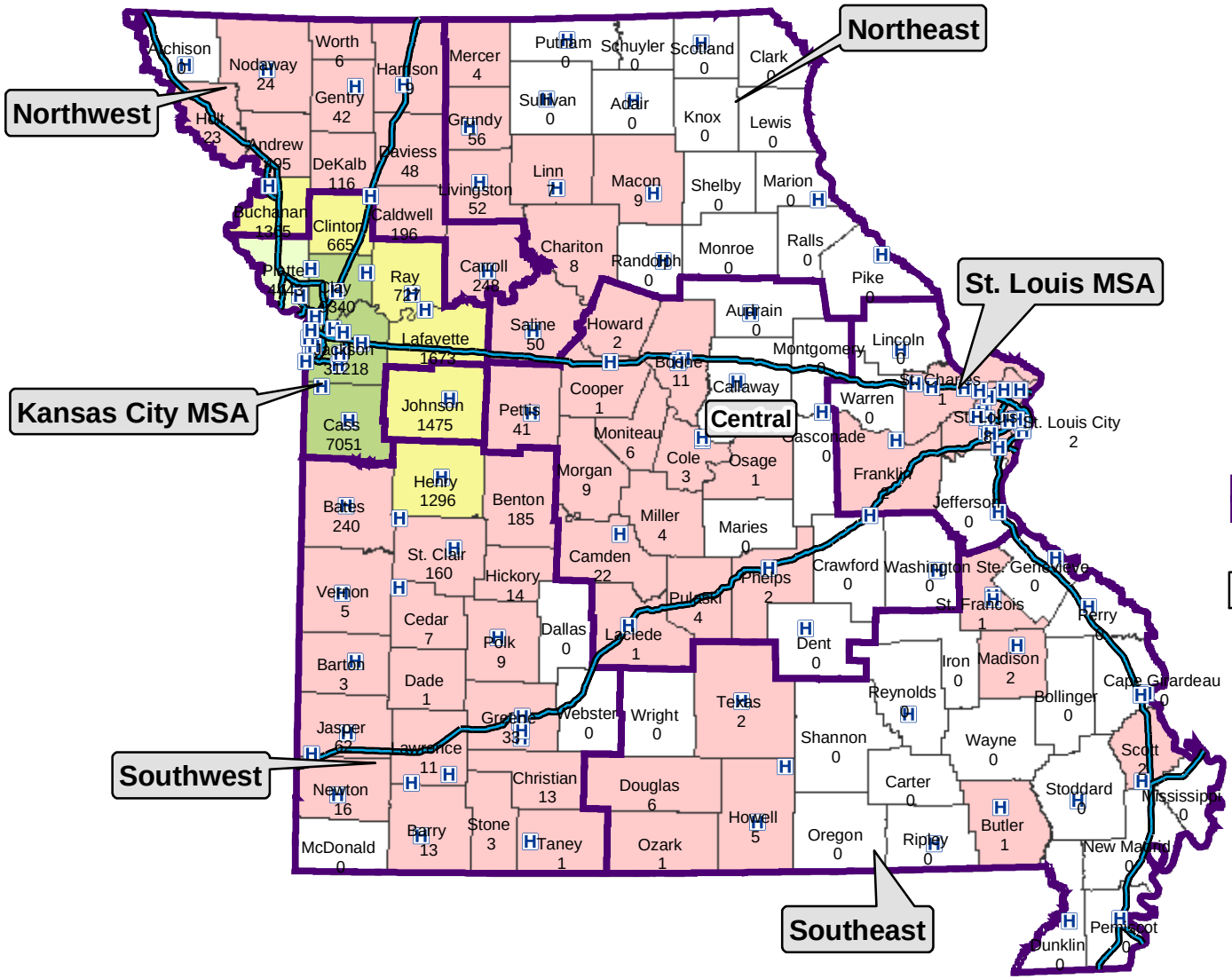


Community Health Plan

- Absence of this HMO
- 1 - 35
- 36 - 319
- 320 - 1224
- 1225 - 7322
- H Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label County Name and the Number of Enrollees

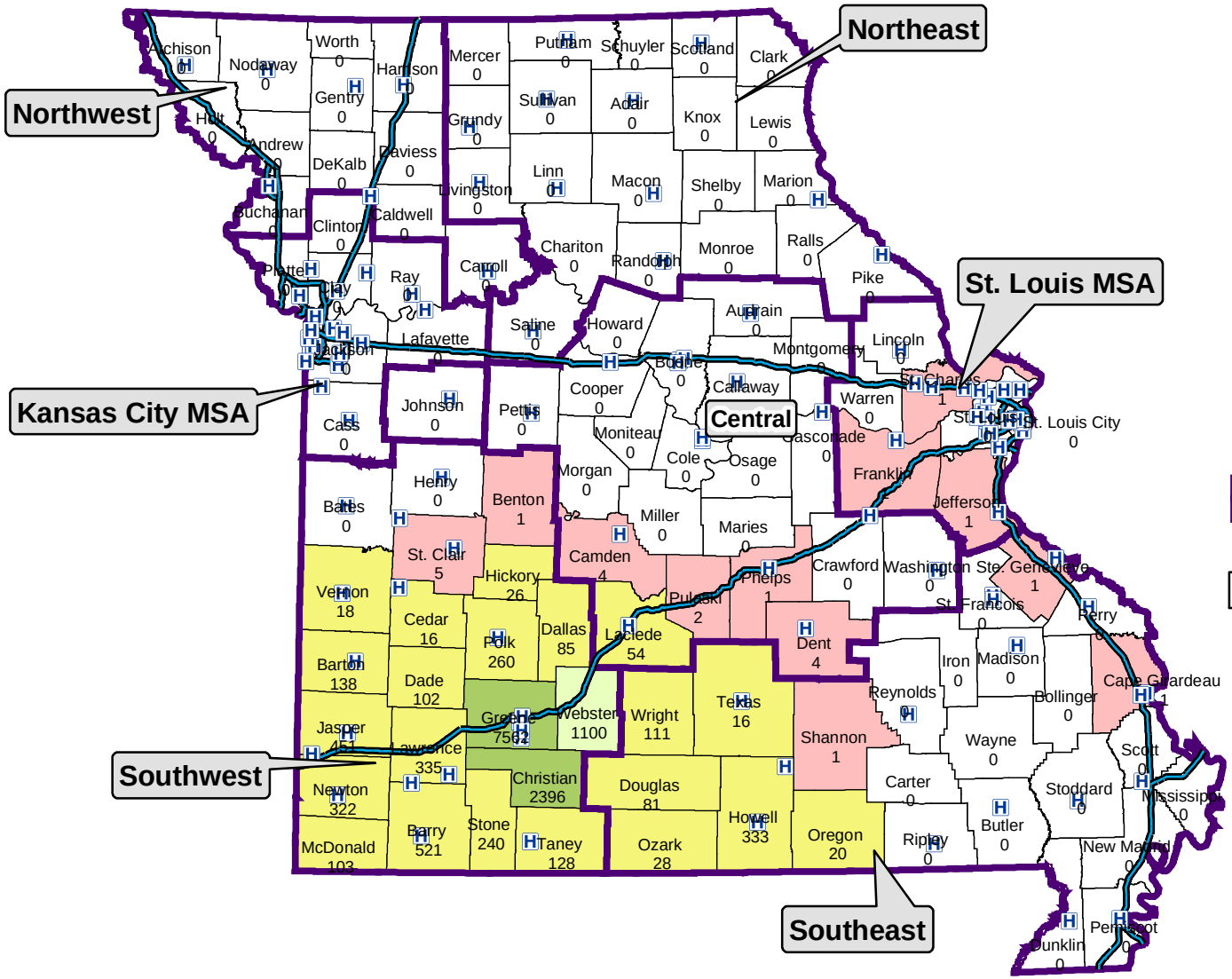
Source: Missouri Department of Insurance, 2003.

Presence of Coventry Health Care of Kansas City, Inc. by Missouri Counties, 2003



Source: Missouri Department of Insurance, 2003.

Presence of Cox Health Systems HMO, Inc. by Missouri Counties, 2003

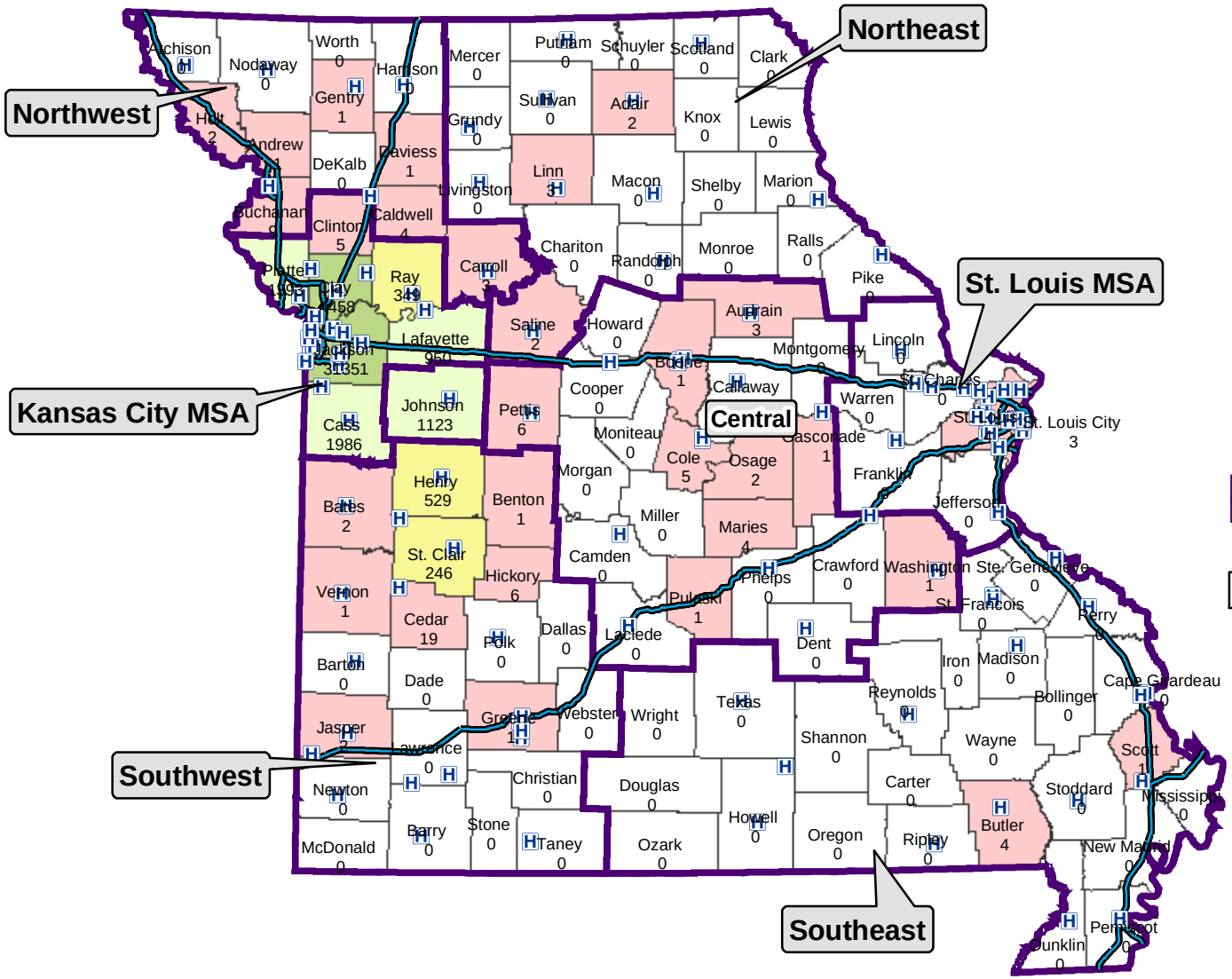


Cox Health Systems HMO, Inc.

- Absence of this HMO
- 1 - 13
- 14 - 521
- 522 - 1100
- 1101 - 7562
- H Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label County Name and the Number of Enrollees

Source: Missouri Department of Insurance, 2003.

Presence of Firstguard Health Plan, Inc. by Missouri Counties, 2003

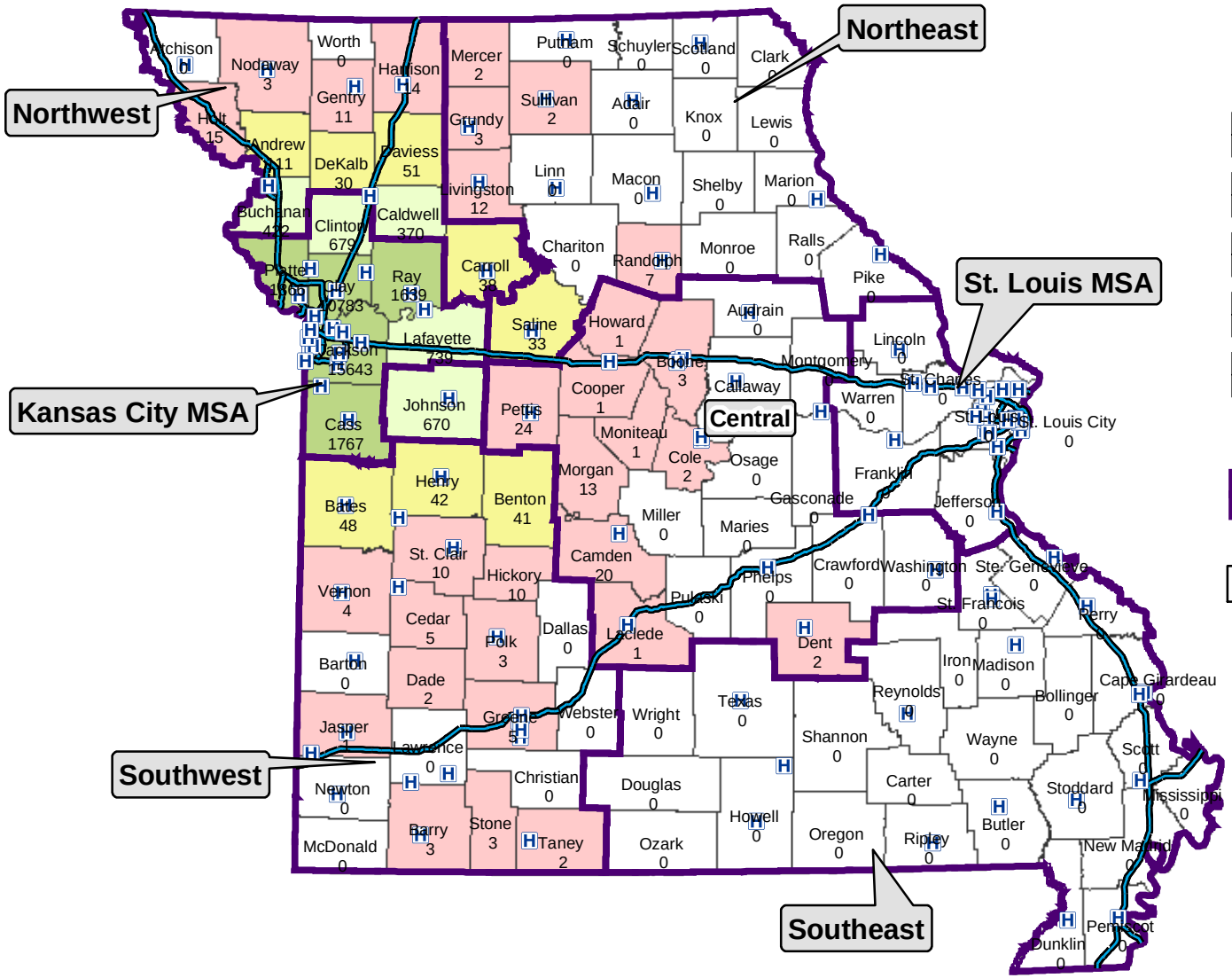


Firstguard Health Plan, Inc.

- Absence of this HMO
- 1 - 19
- 20 - 529
- 530 - 1989
- 1990 - 31351
- H Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label County Name and the Number of Enrollees

Source: Missouri Department of Insurance, 2003.

Presence of Good Health HMO, Inc. by Missouri Counties, 2003

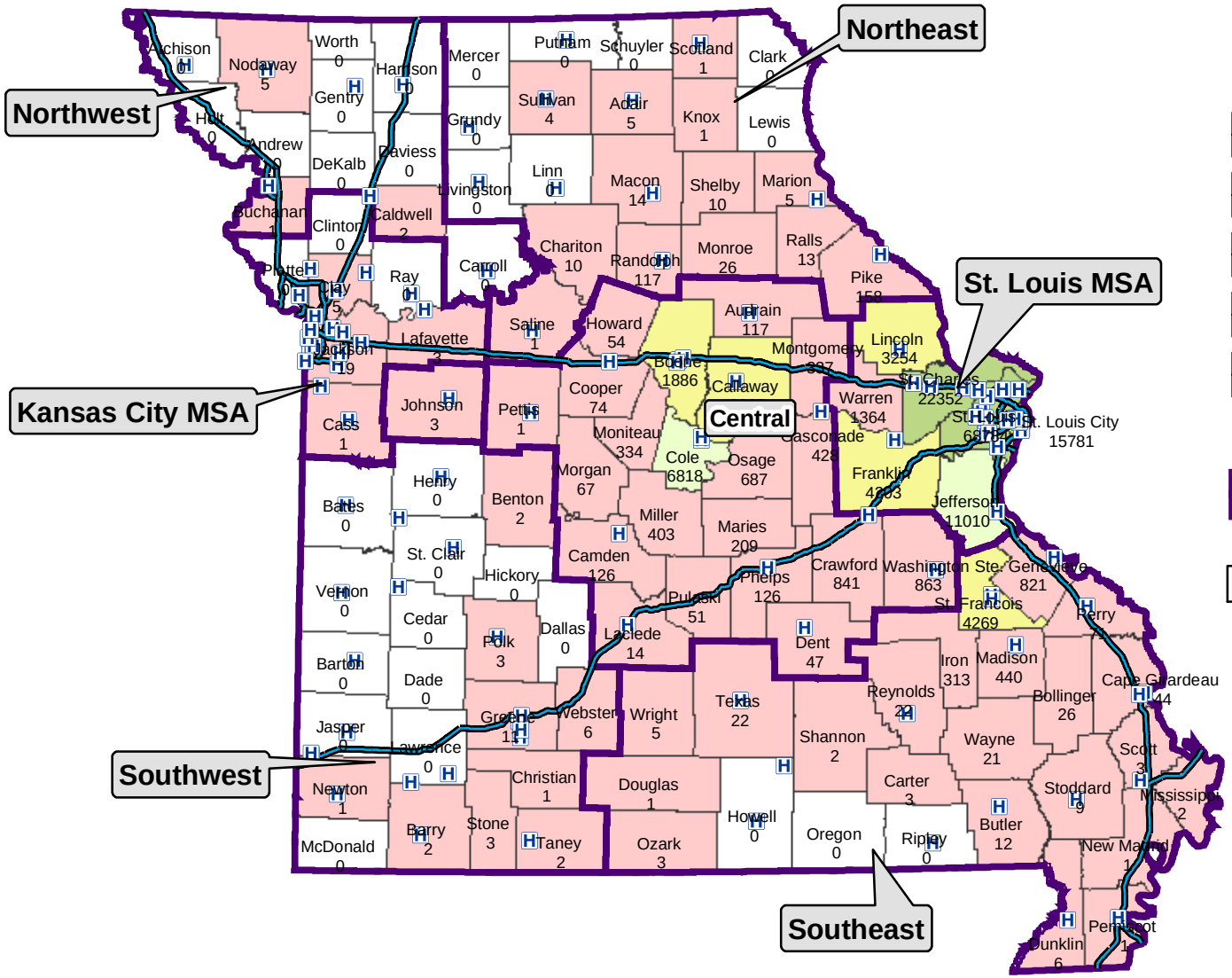


Good Health HMO, Inc.

- Absence of this HMO
- 1 - 24
- 25 - 111
- 112 - 739
- 740 - 15643
- H Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label County Name and the Number of Enrollees

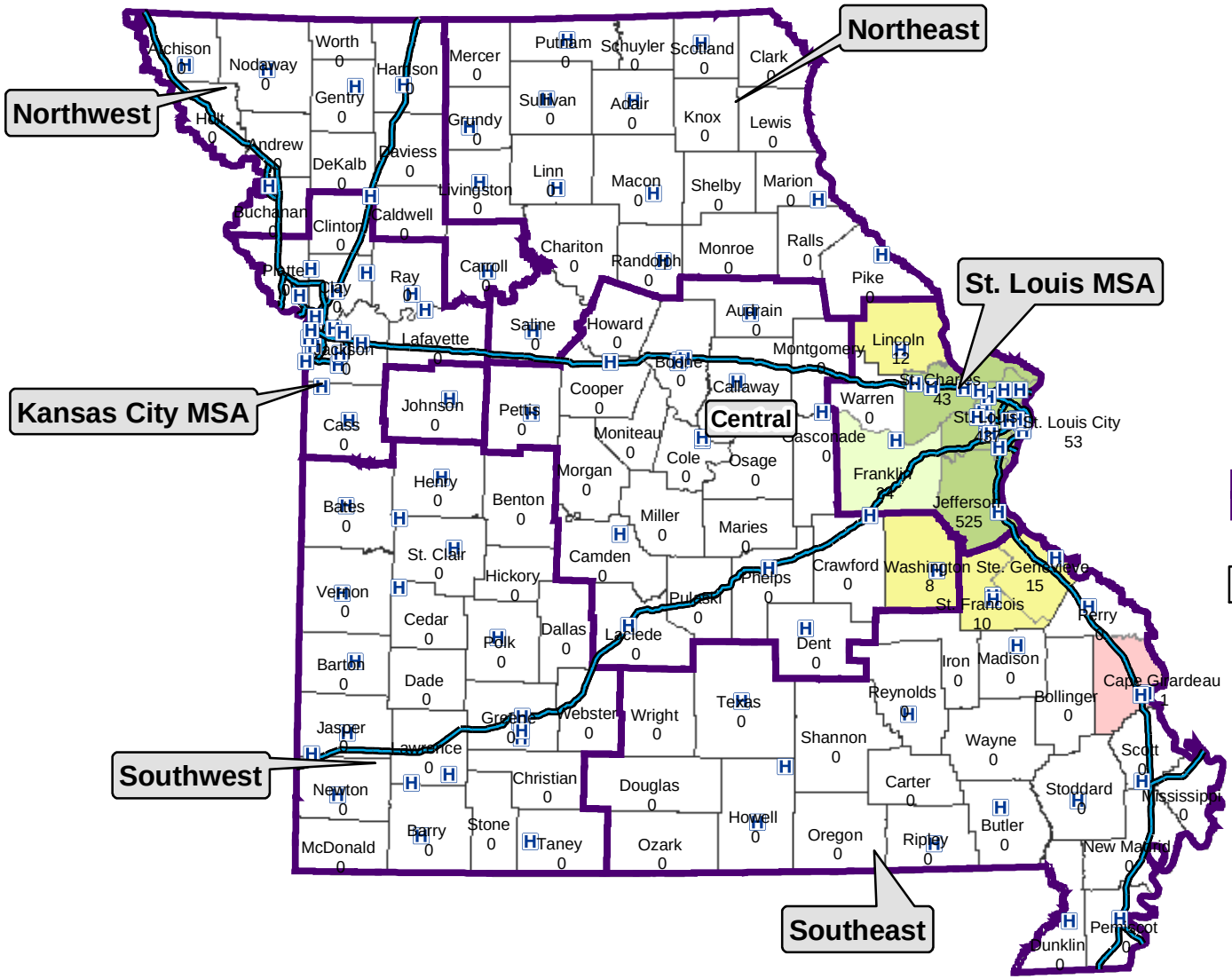
Source: Missouri Department of Insurance, 2003.

Presence of Group Health Plan, Inc. by Missouri Counties, 2003



Source: Missouri Department of Insurance, 2003.

Presence of Great-West Healthcare of KS/MO, Inc. by Missouri Counties, 2003

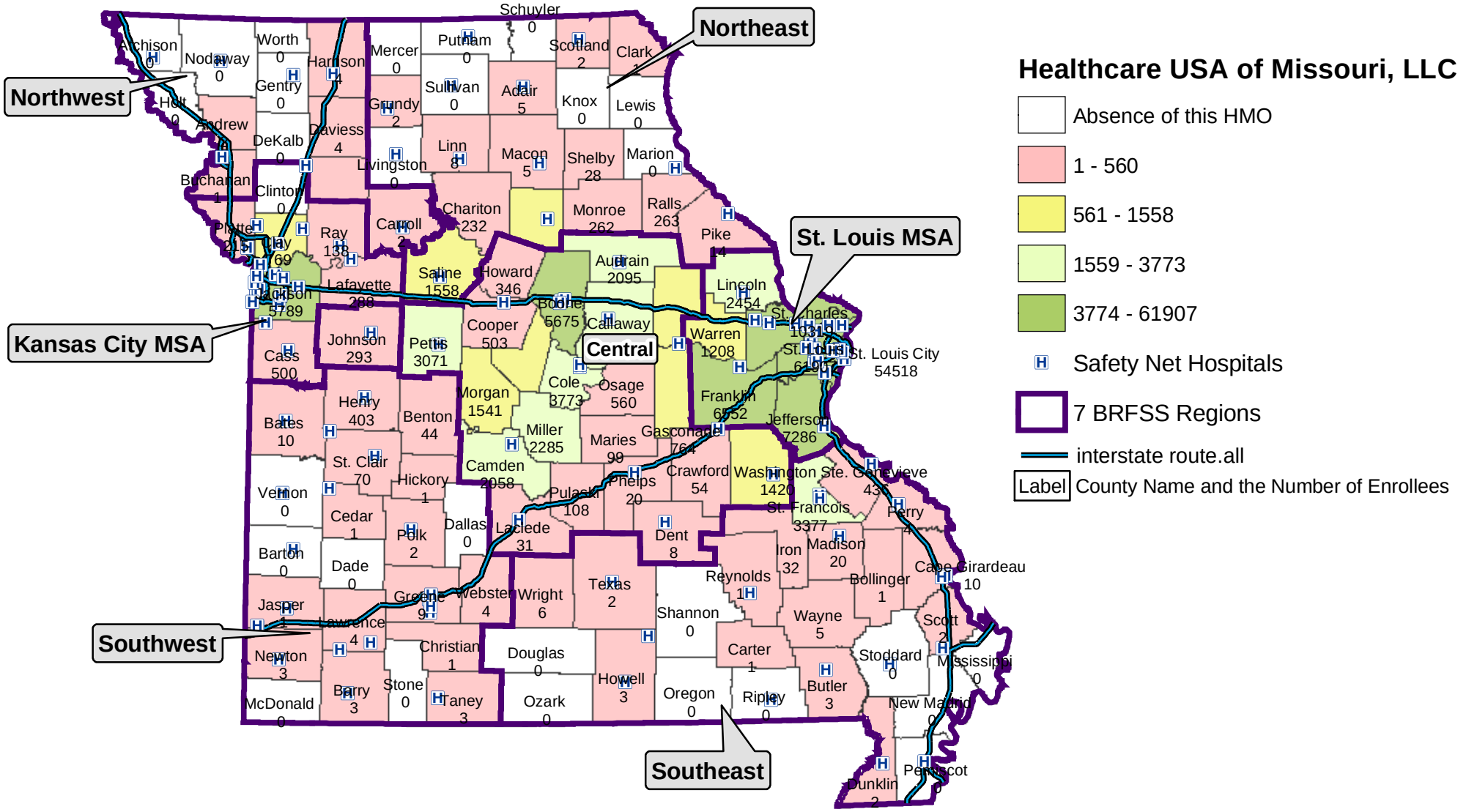


Great-West Healthcare of KS/MO, Inc

- Absence of this HMO
- 1
- 2 - 15
- 16 - 24
- 25 - 525
- Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label: County Name and the Number of Enrollees

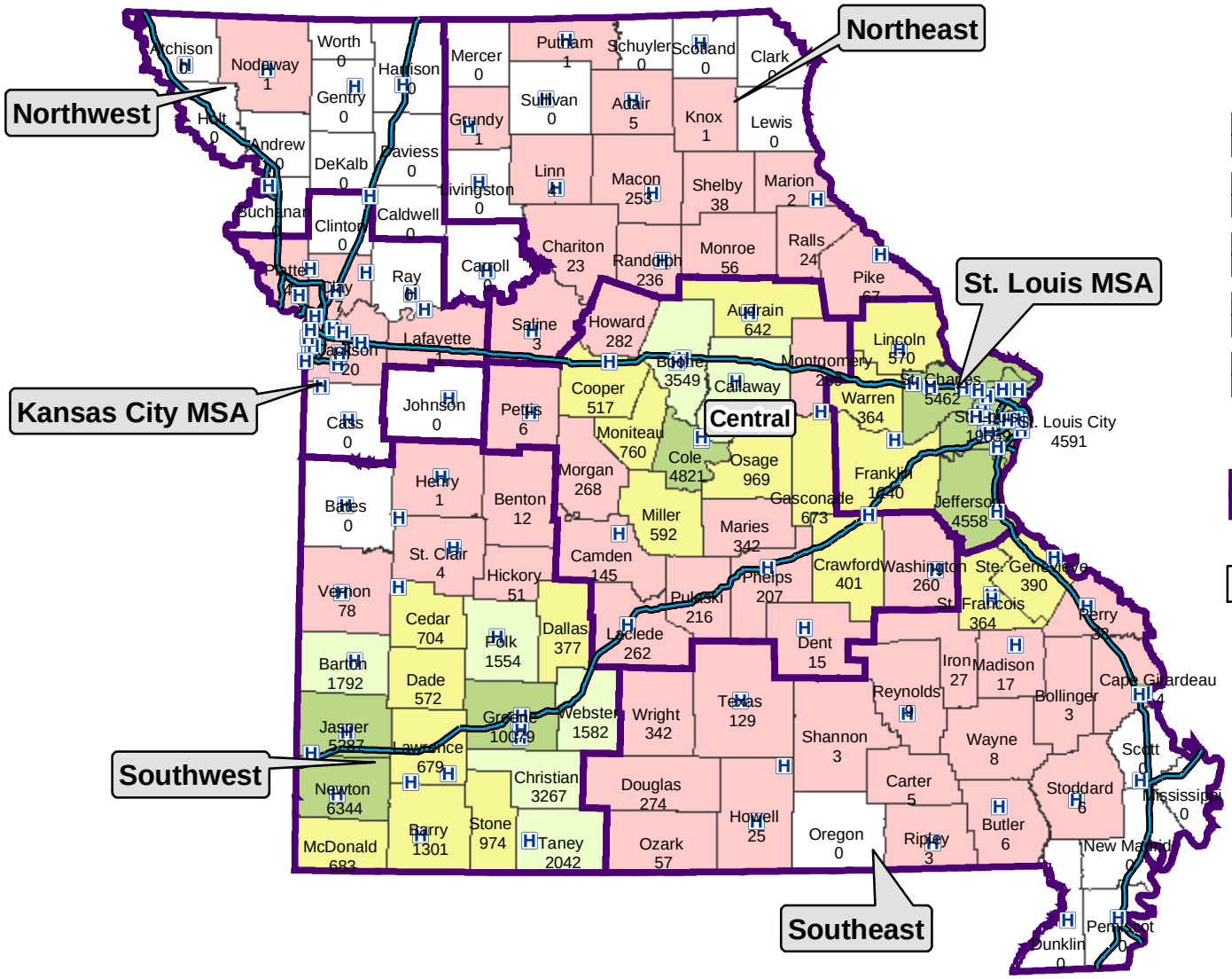
Source: Missouri Department of Insurance, 2003.

Presence of Healthcare USA of Missouri, LLC by Missouri Counties, 2003



Source: Missouri Department of Insurance, 2003.

Presence of HMO Missouri, Inc. by Missouri Counties, 2003

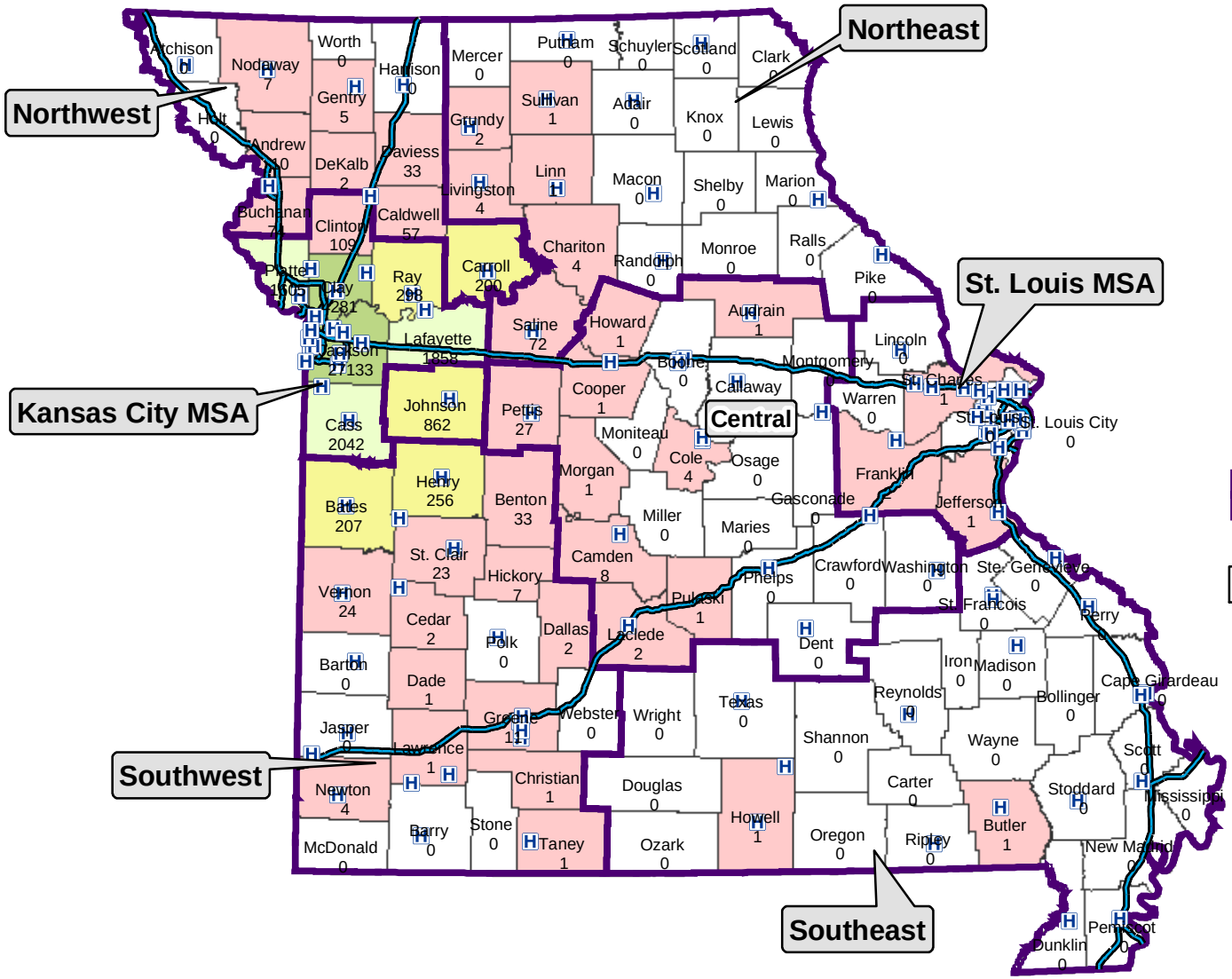


HMO Missouri, Inc.

- Absence of this HMO
- 1 - 342
- 343 - 1301
- 1302 - 3549
- 3550 - 19559
- H Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label County Name and the Number of Enrollees

Source: Missouri Department of Insurance, 2003.

Presence of Humana Health Plan, Inc. by Missouri Counties, 2003

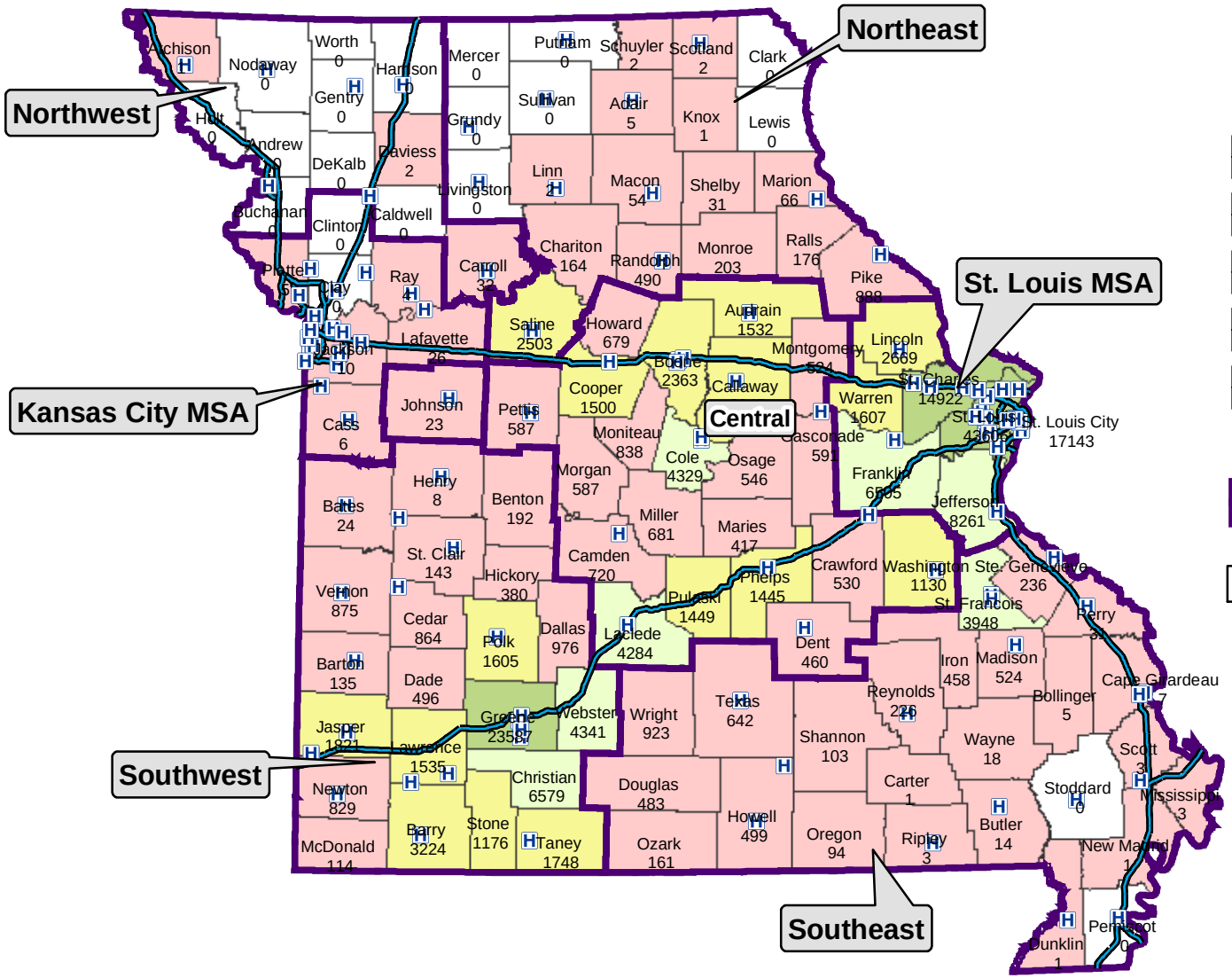


Humana Health Plan, Inc.

- Absence of this HMO
- 1 - 109
- 110 - 862
- 863 - 2042
- 2043 - 27133
- H Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label County Name and the Number of Enrollees

Source: Missouri Department of Insurance, 2003.

Presence of Mercy Health Plan of Missouri, Inc by Missouri Counties, 2003

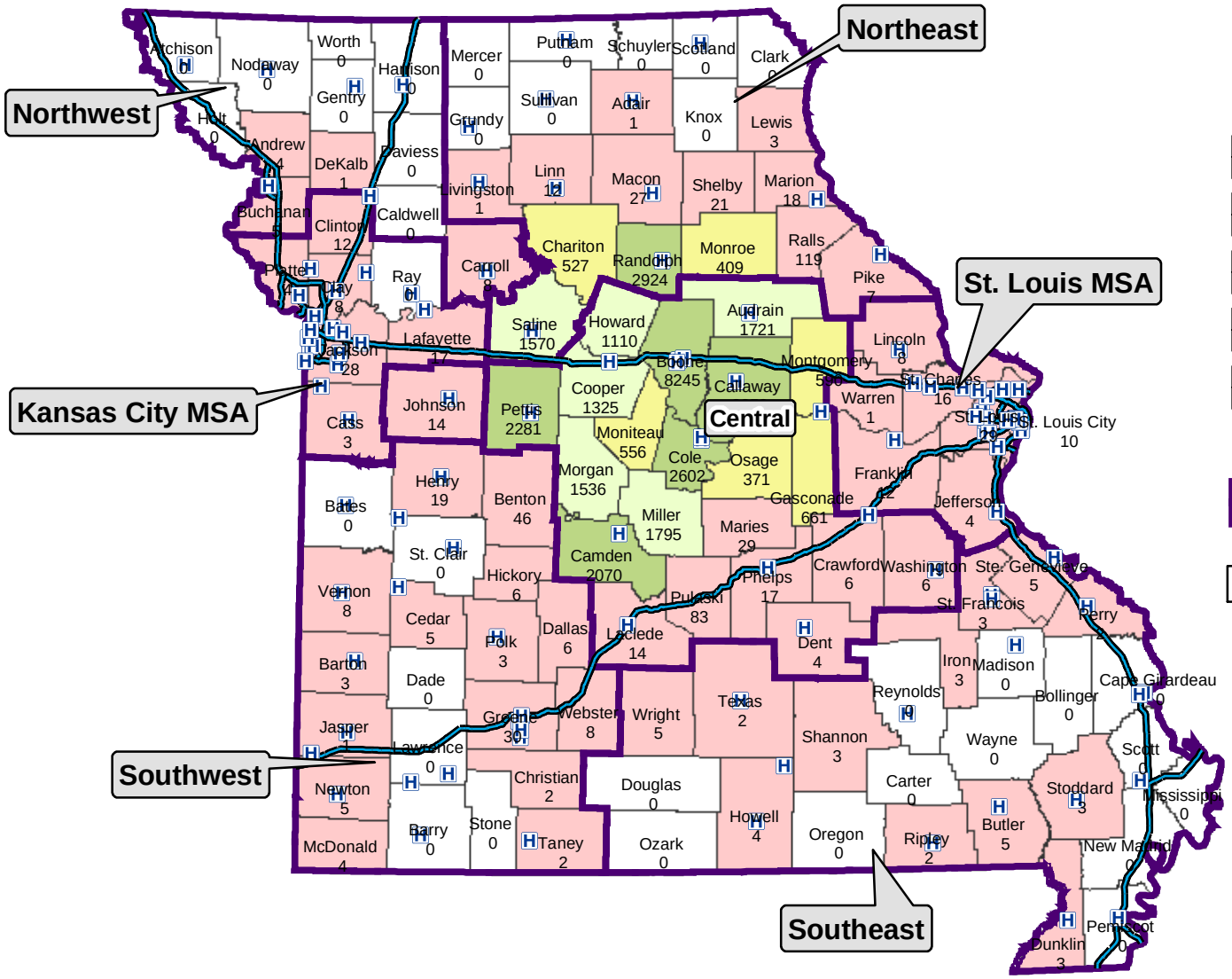


Mercy Health Plan of Missouri, Inc.

- Absence of this HMO
- 1 - 976
- 977 - 3224
- 3225 - 8261
- 8262 - 43606
- H Safety Net Hospitals
- 7 BRFSS Regions
- interstate route.all
- Label County Name and the Number of Enrollees

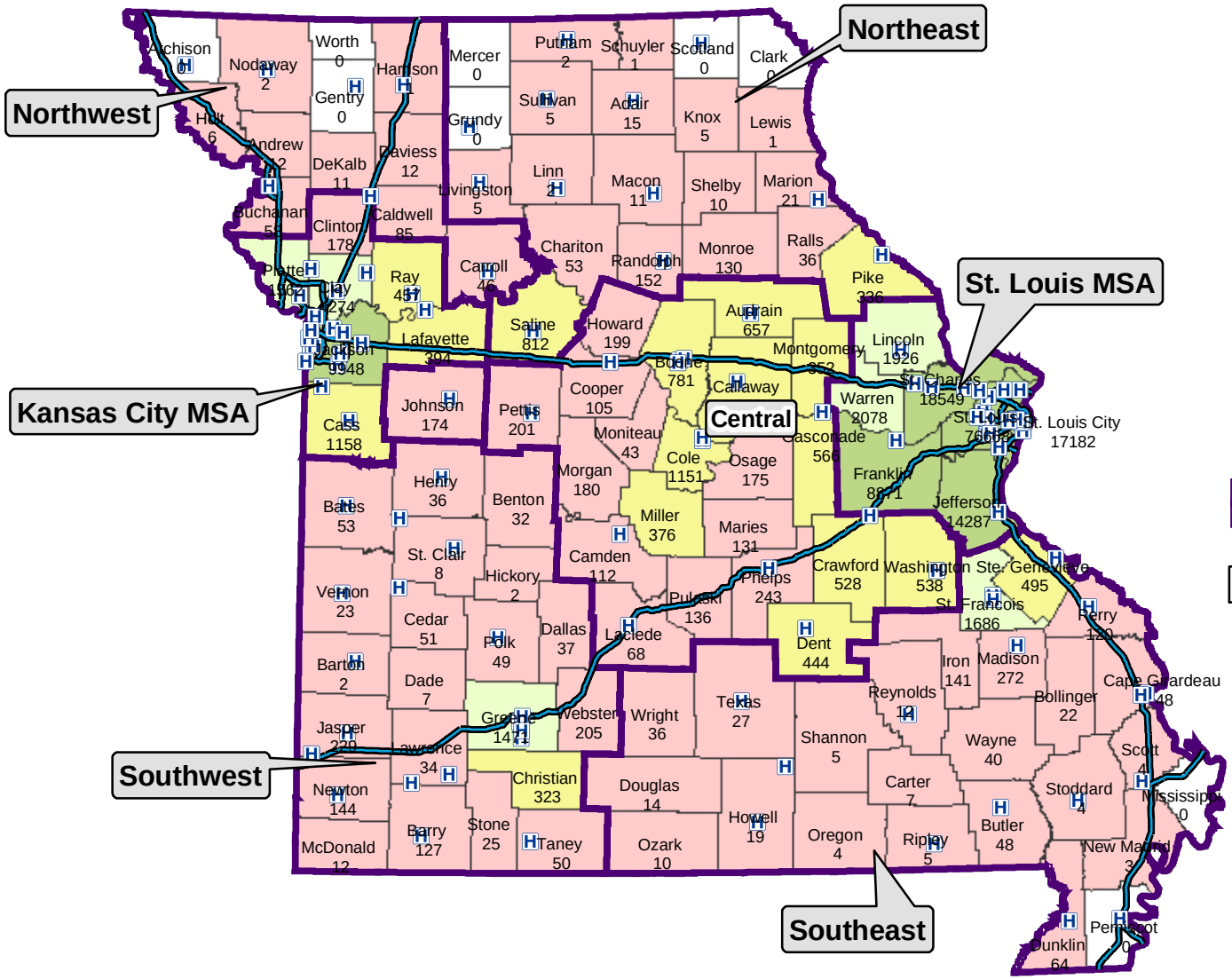
Source: Missouri Department of Insurance, 2003.

Presence of Missouri Care, LC by Missouri Counties, 2003



Source: Missouri Department of Insurance, 2003.

Presence of United Healthcare of the Midwest, Inc by Missouri Counties, 2003



Source: Missouri Department of Insurance, 2003.

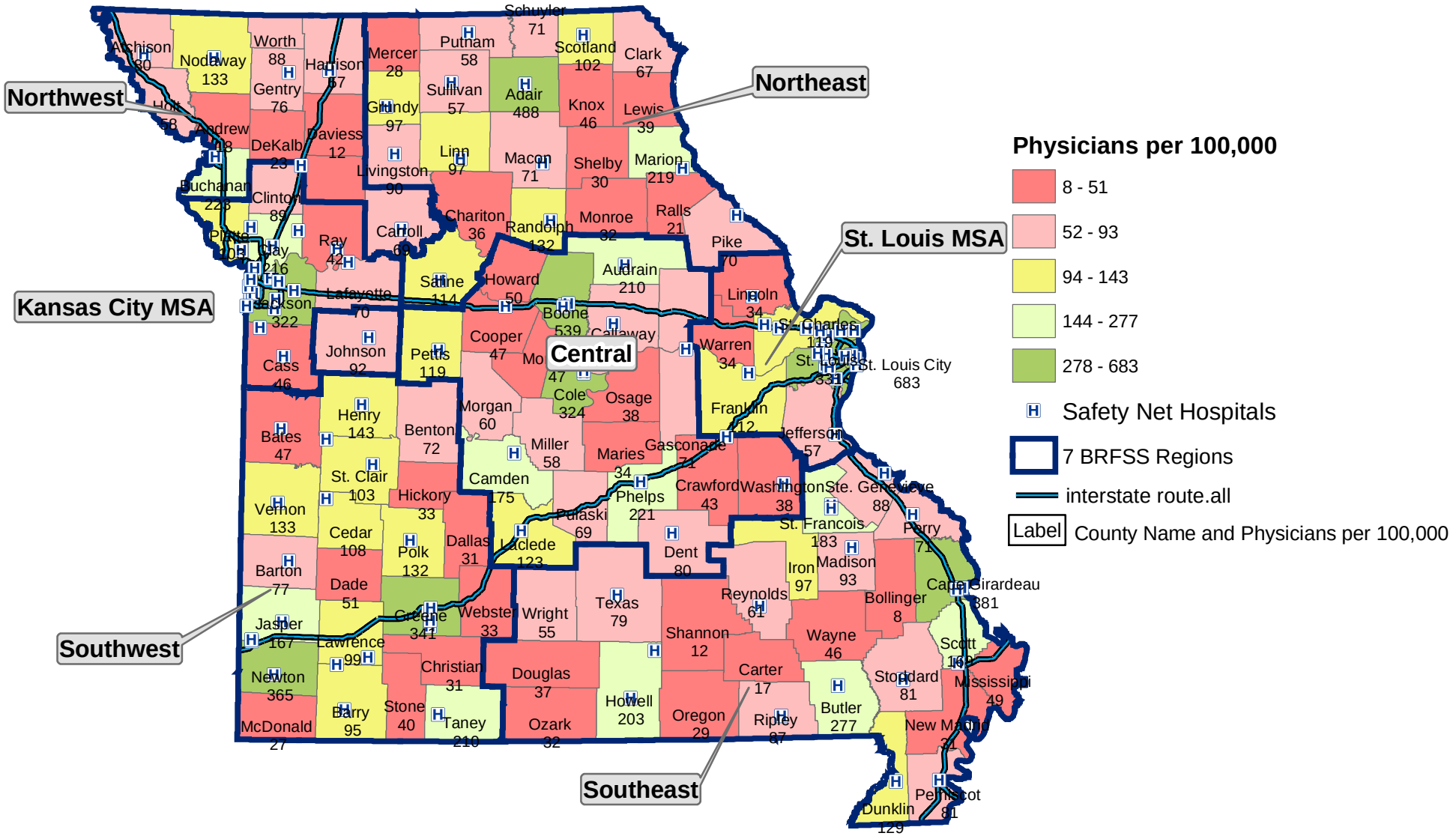
Appendix - 3(c)

GIS Maps:

Physicians' Categories by Missouri Counties

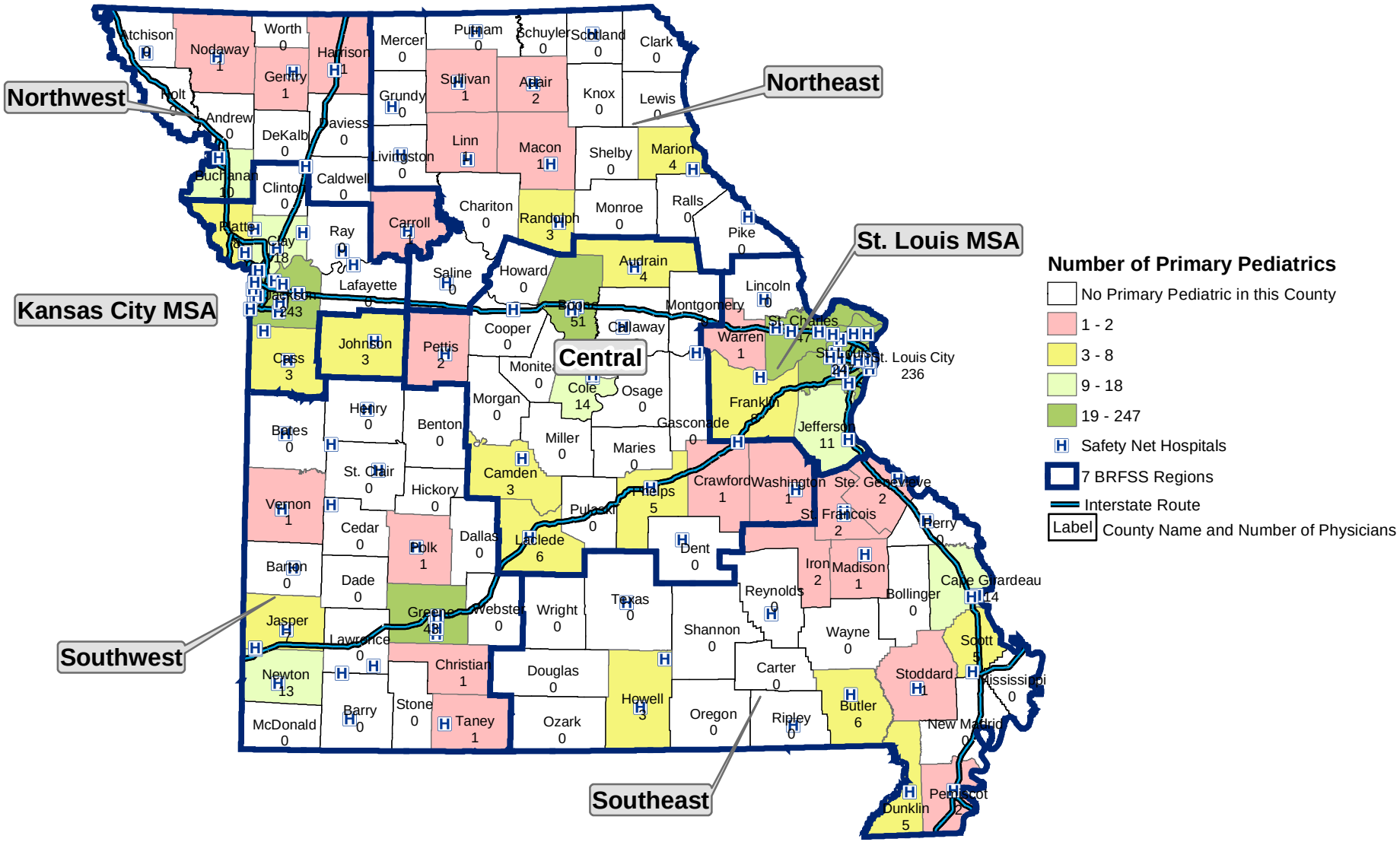
Numbers and Rate per 100,000

Physicians in Missouri: Rate per 100,000 by Missouri Counties, 2004



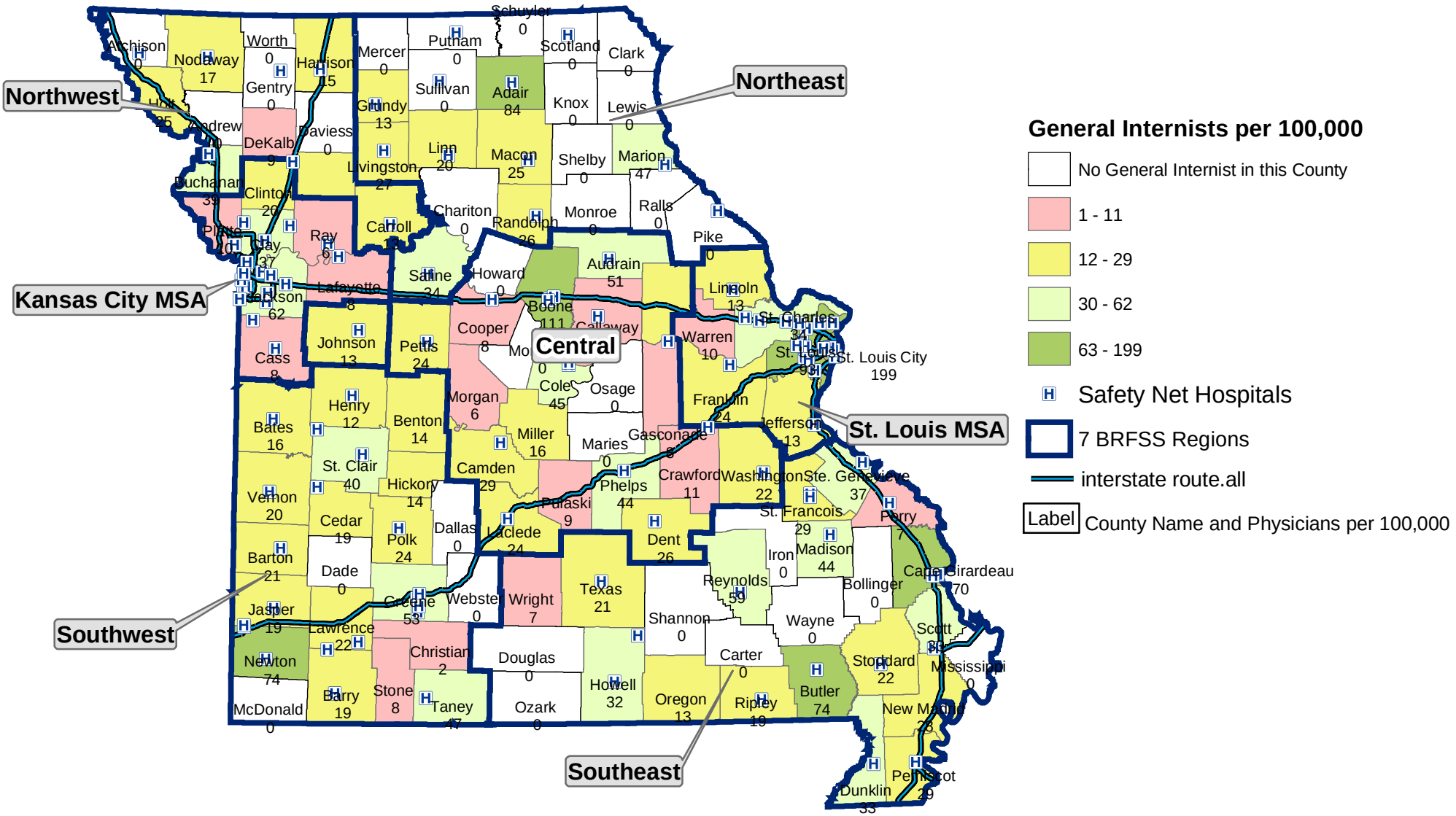
Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Number of Primary Pediatric Physicians by Missouri Counties, 2004



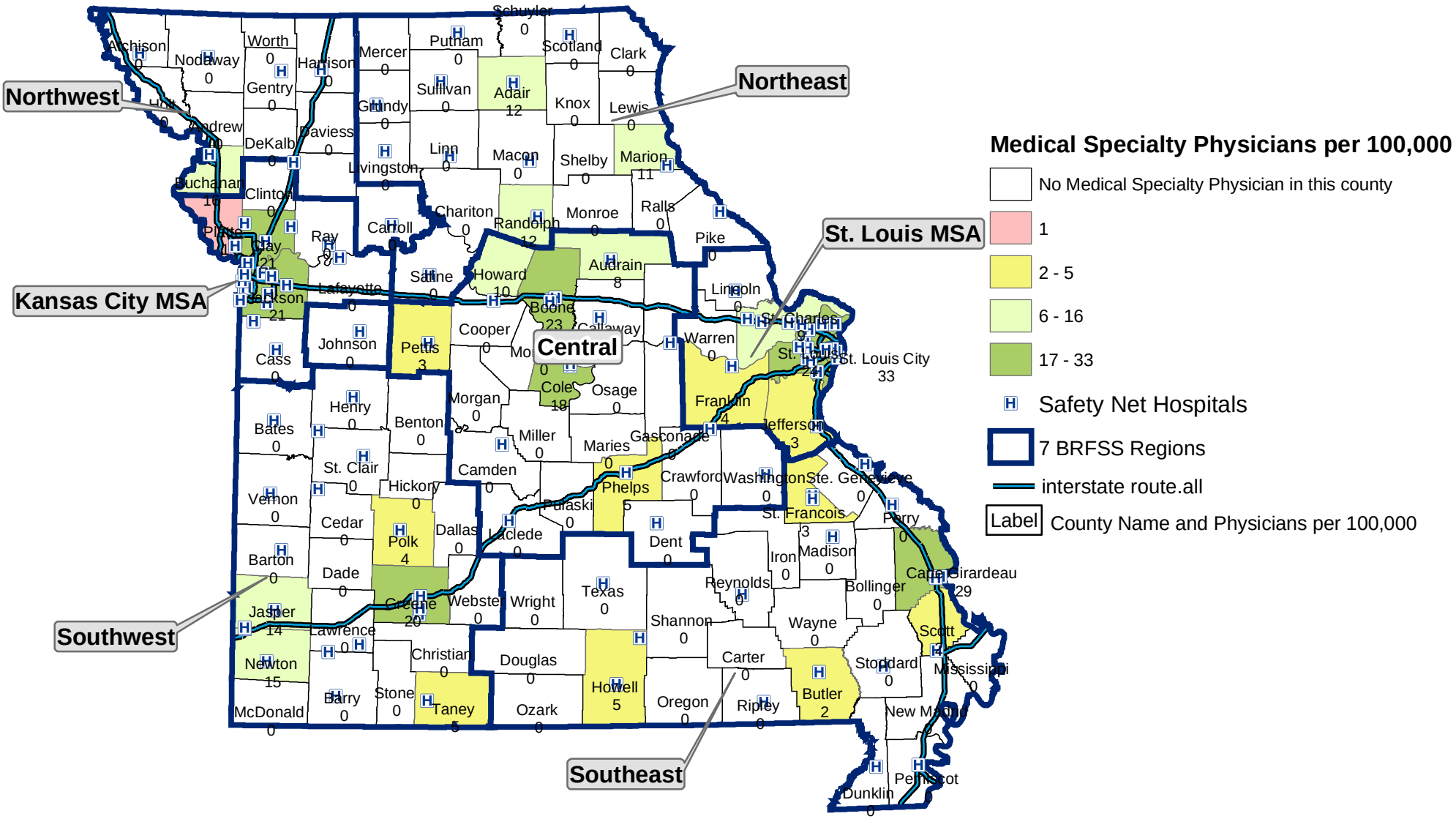
Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

General Internal Medicine Physicians: Rate per 100,000 by Missouri Counties, 2004



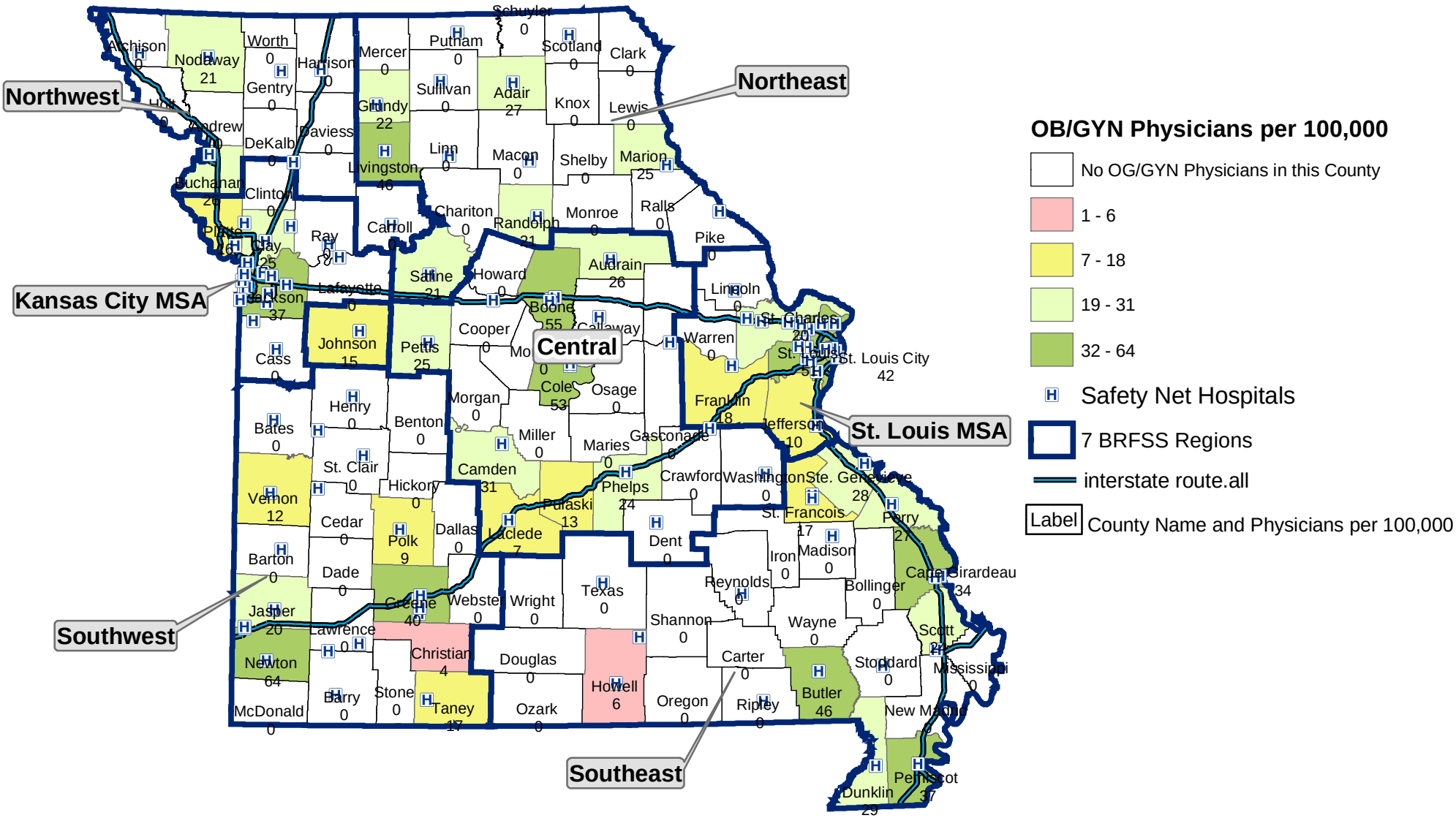
Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Medical Specialty Physicians: Rate per 100,000 by Missouri Counties, 2004



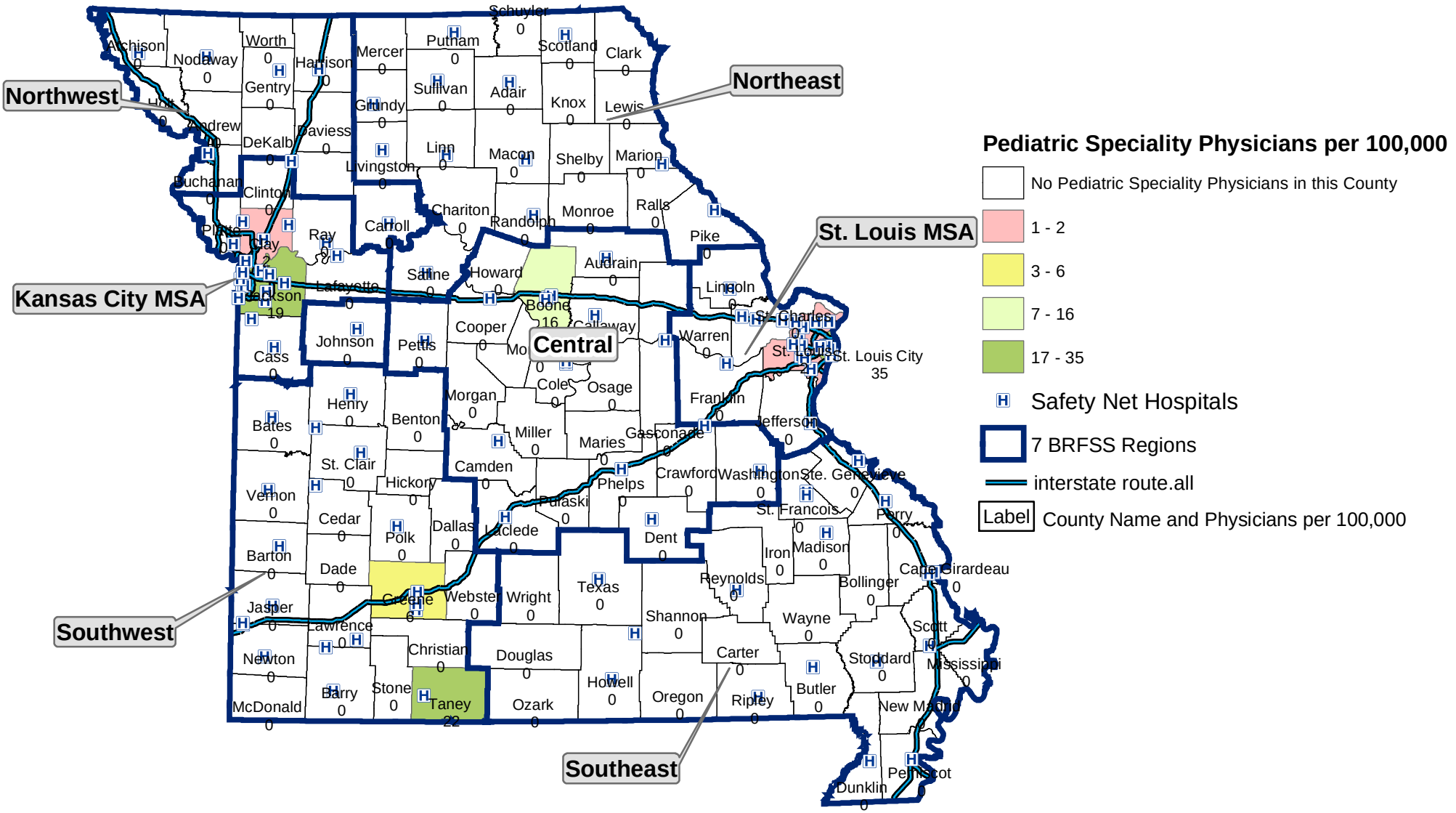
Source: Center for Health Information Mangement and Evaluation, Missouri Department of Health and Senior Services.

OB/GYN Physicians: Rate per 100,000 by Missouri Counties, 2004



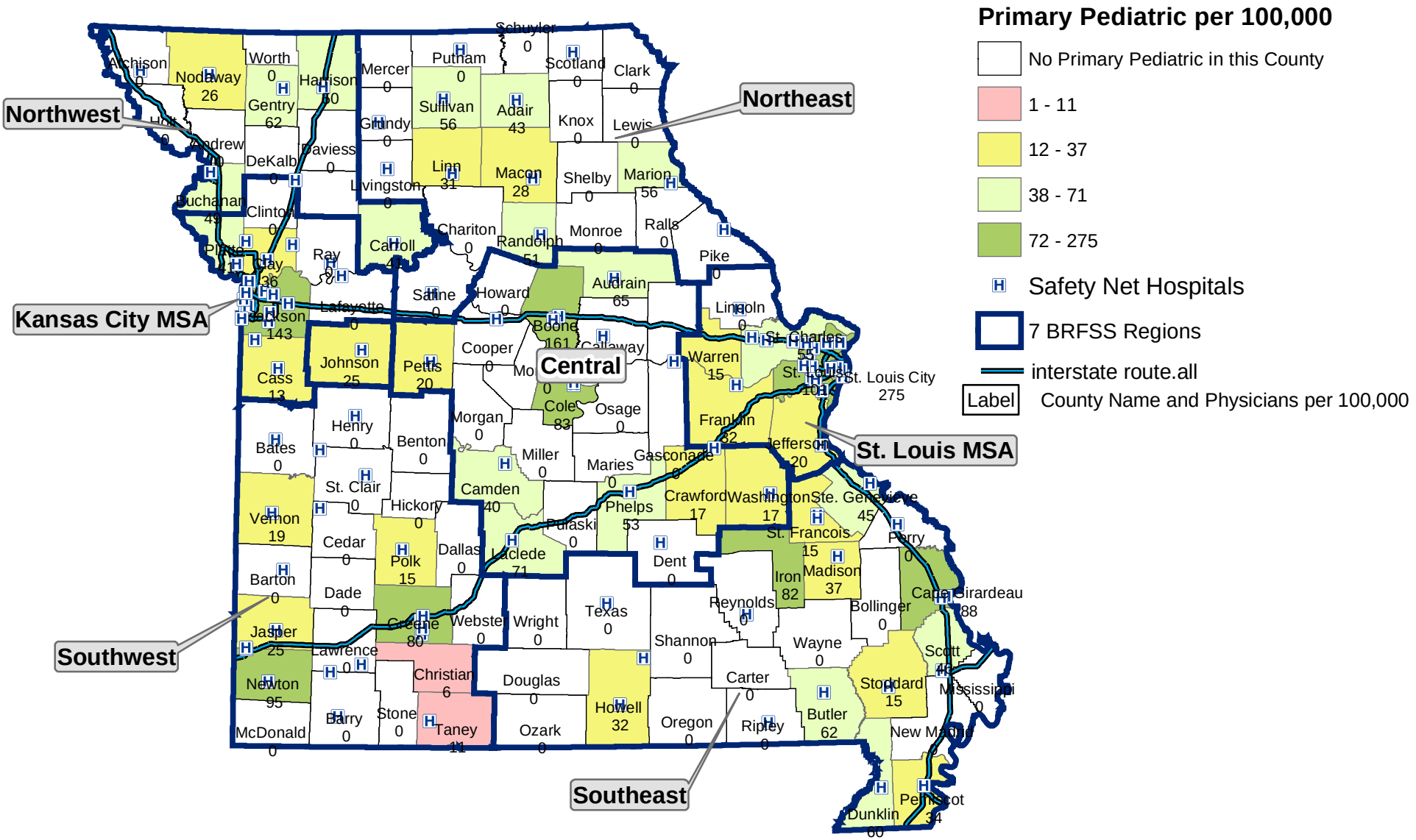
Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Pediatric Specialty Physicians: Rate per 100,000 by Missouri Counties, 2004



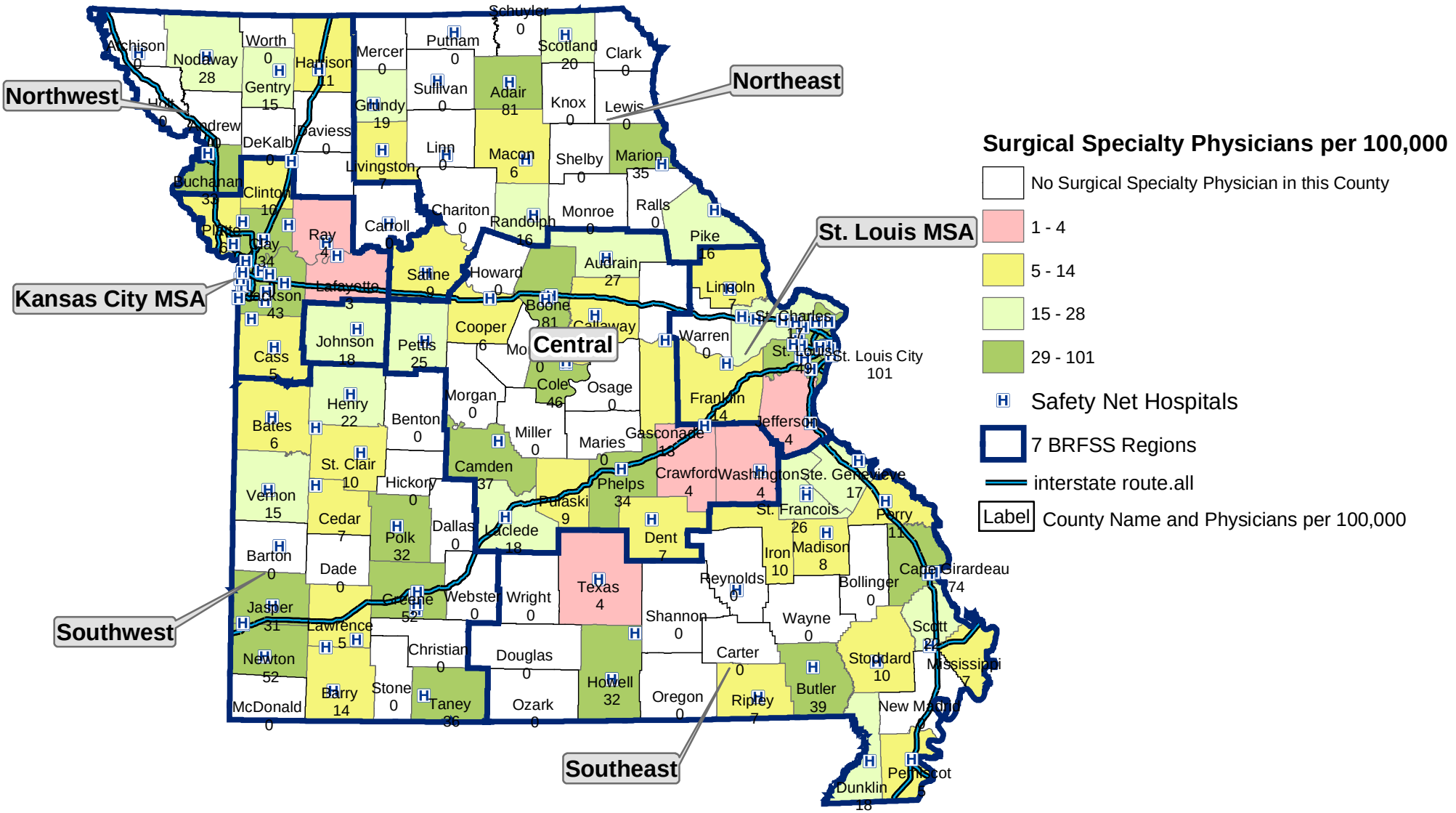
Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Primary Pediatric Physicians: Rate per 100,000 by Missouri Counties, 2004



Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Surgical Specialty Physicians: Rate per 100,000 by Missouri Counties, 2004



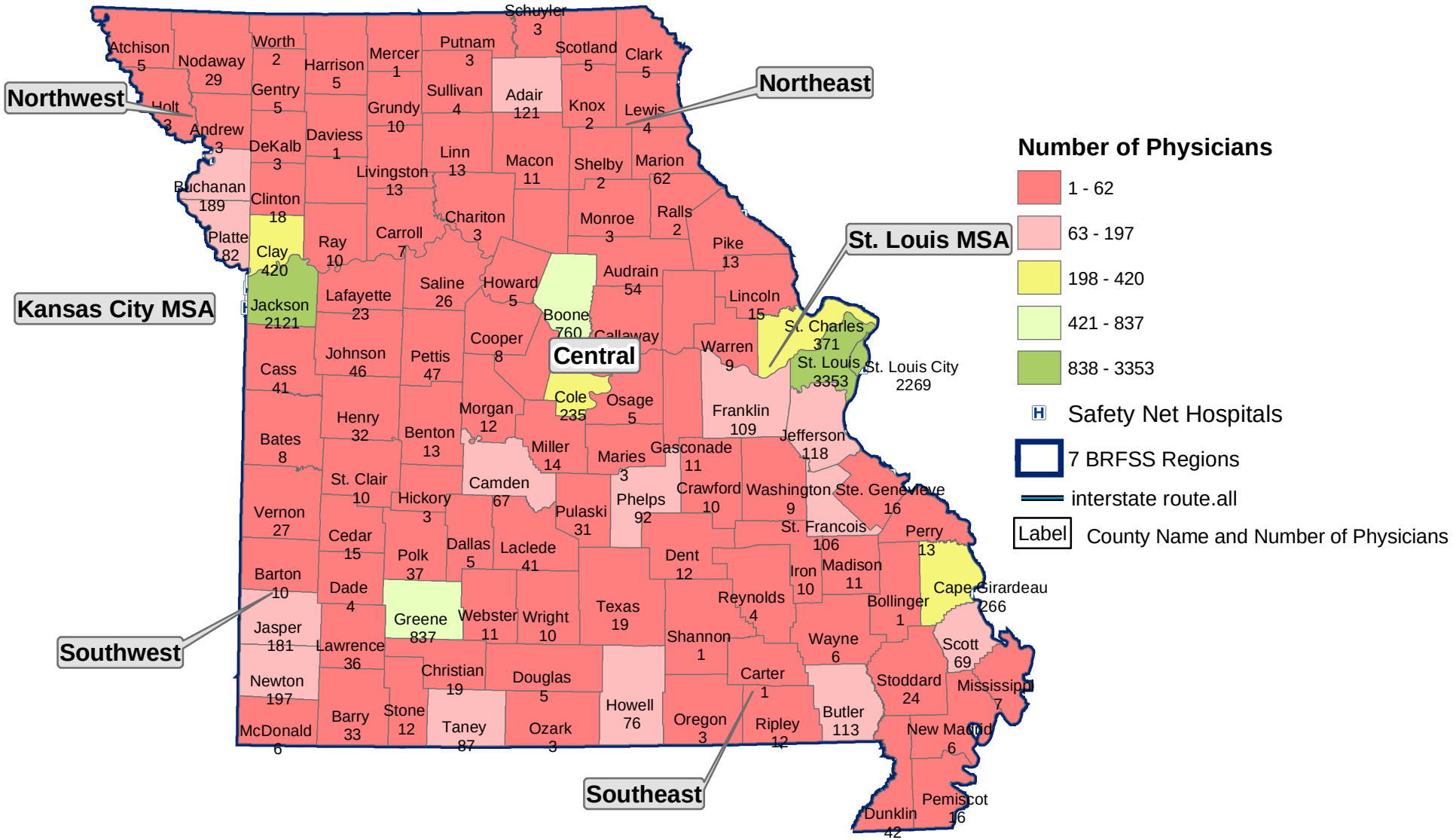
Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Appendix - 3(d)

GIS Maps:

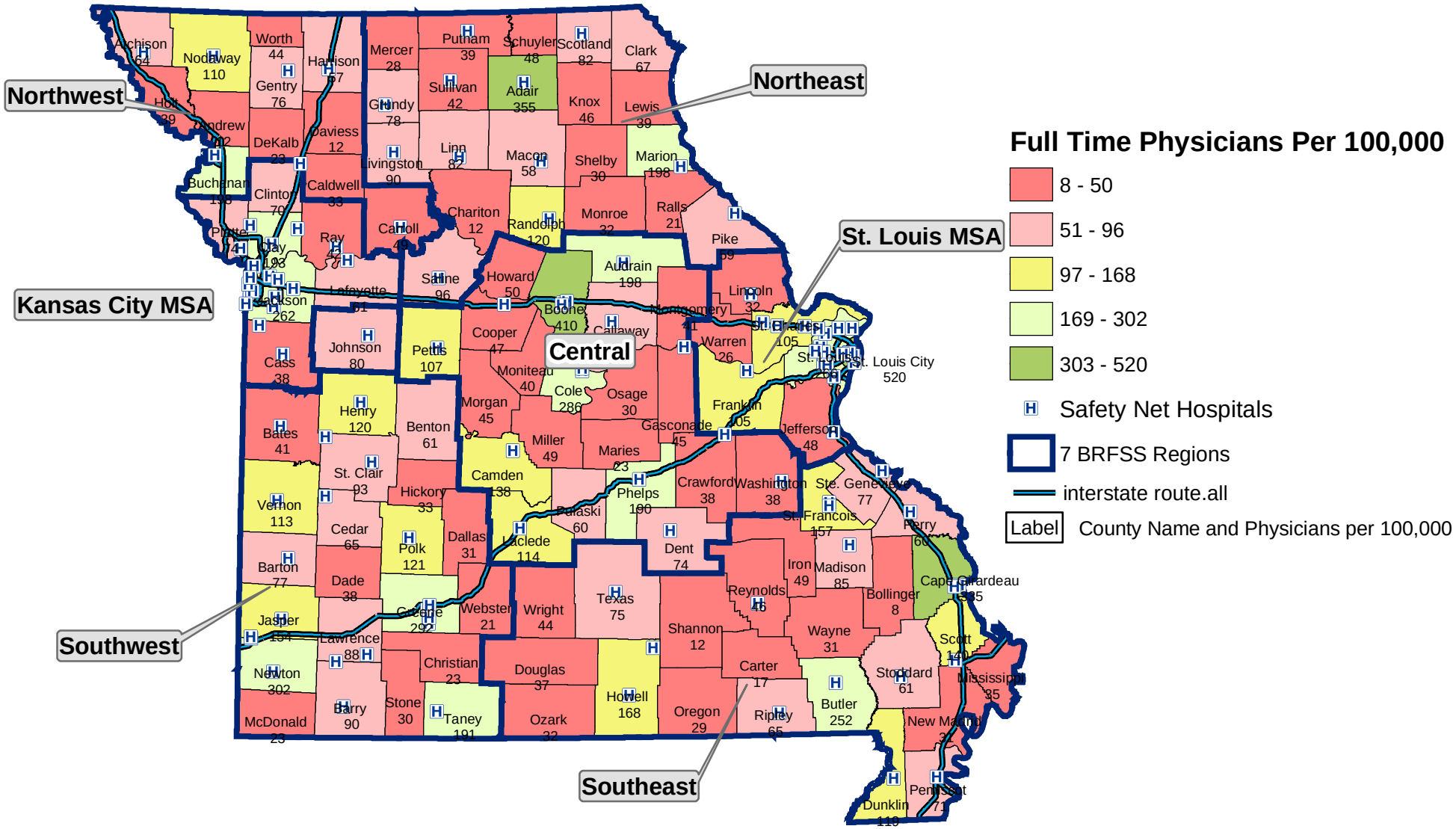
Physicians by Work Status
by Missouri Counties

Number of Physicians by Missouri Counties, 2004



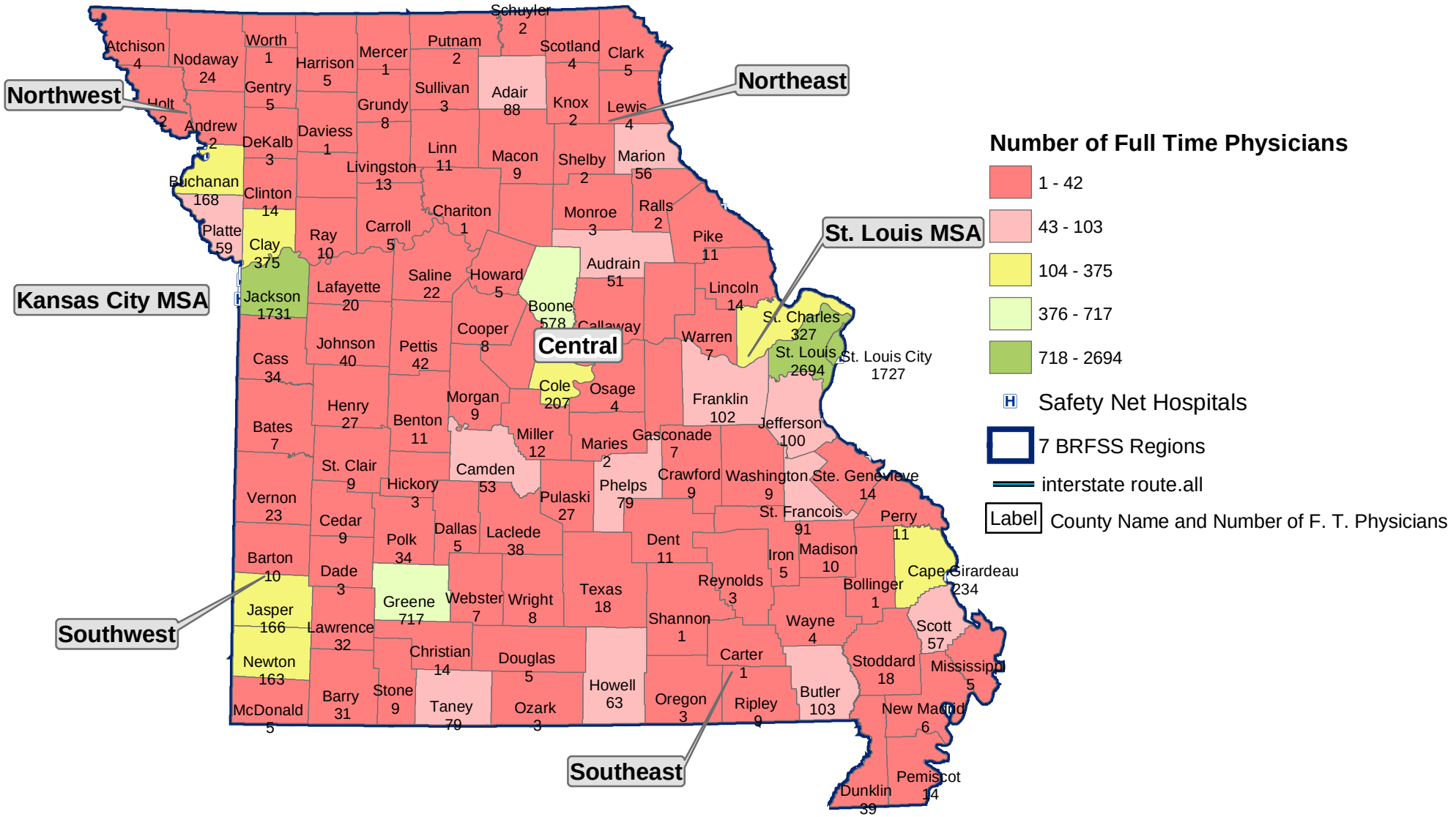
Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Full Time Physicians: Rate per 100,000 by Missouri Counties, 2004



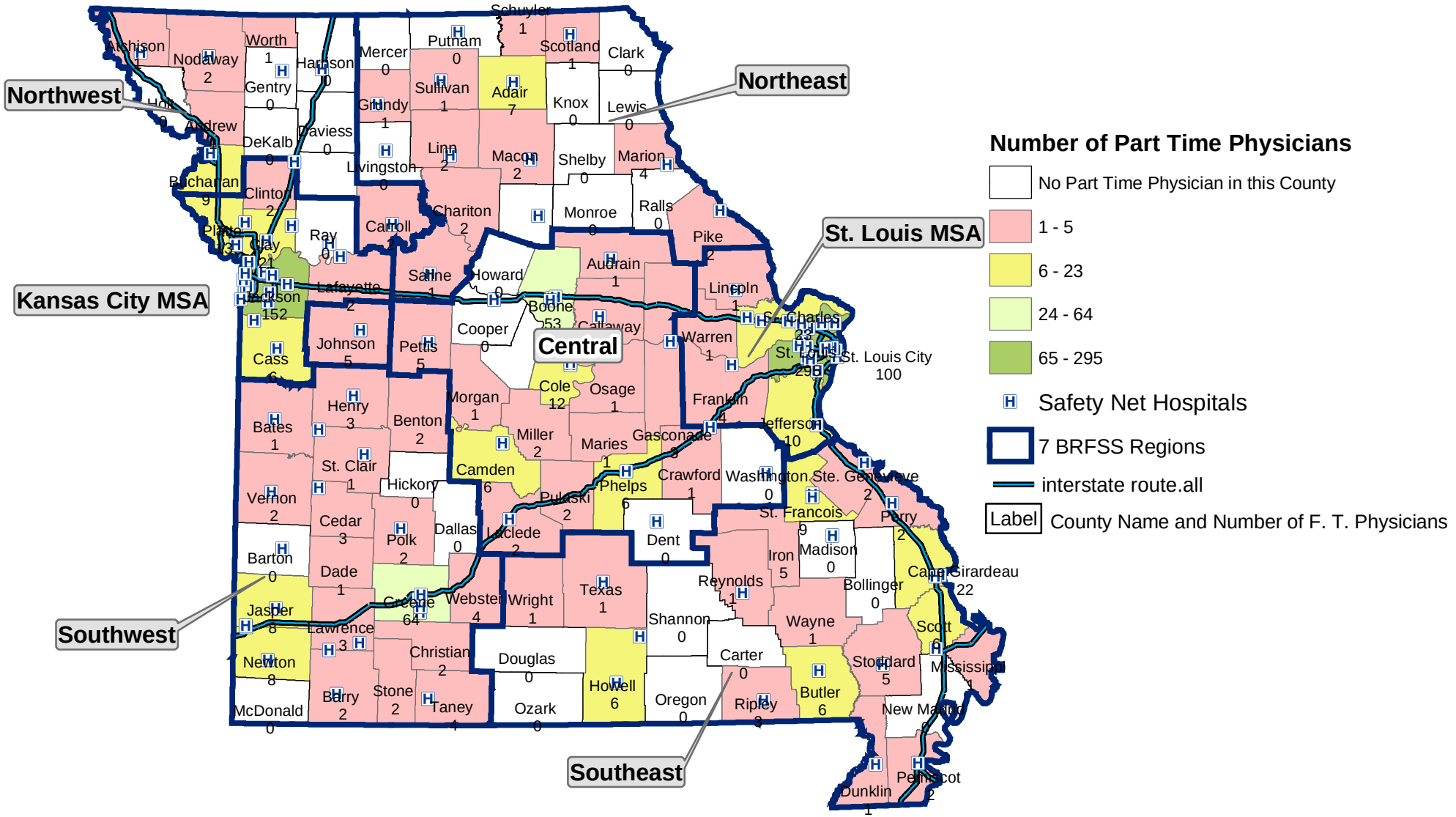
Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Number of Full Time Physicians by Missouri Counties, 2004



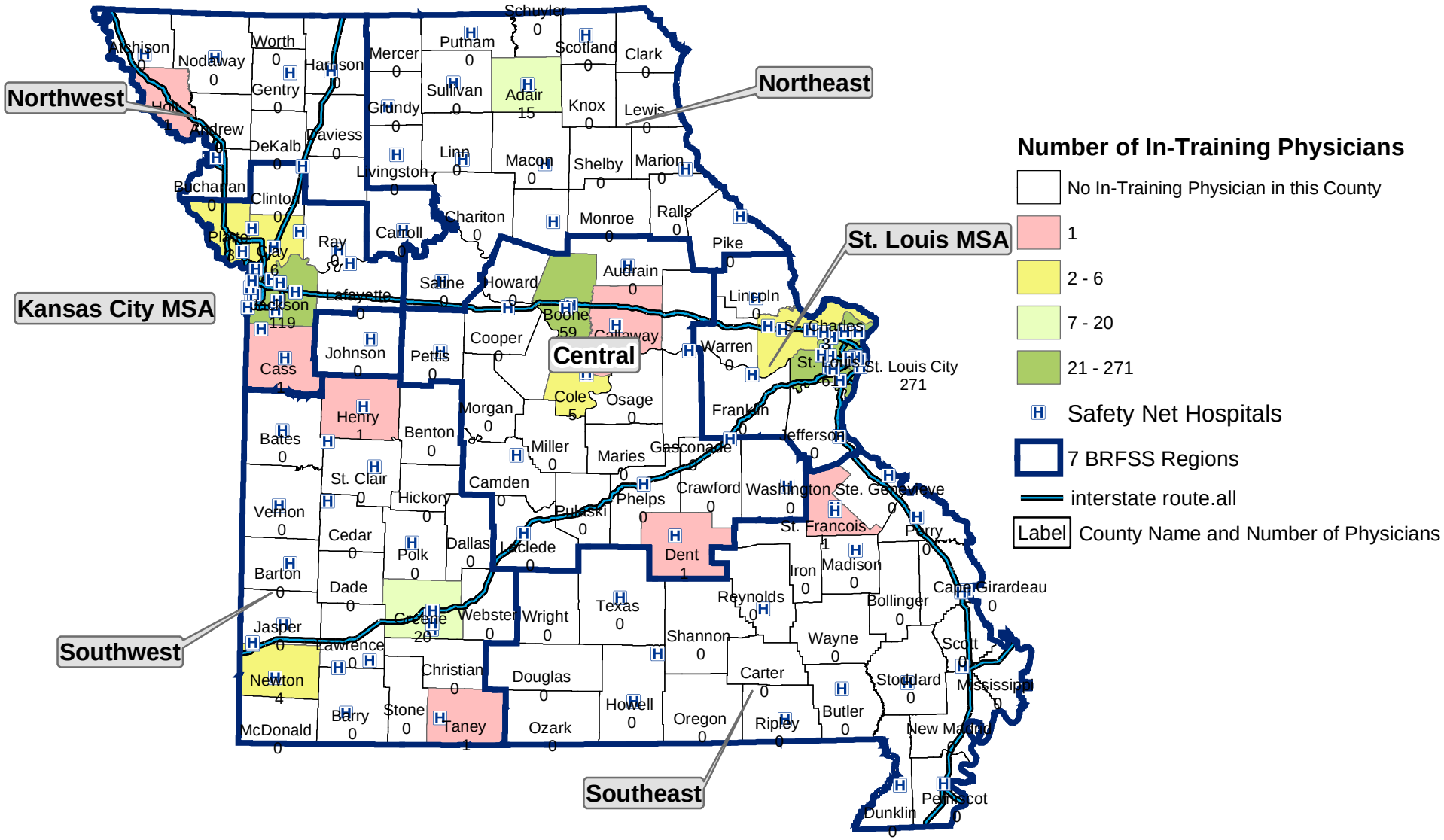
Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Number of Part Time Physicians by Missouri Counties, 2004



Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Number of Physicians In-Training by Missouri Counties, 2004



Source: Center for Health Information Mangement and Evaluation,
Missouri Department of Health and Senior Services.

Appendix - 3(e)

Health System and Safety Net Structure

(Ranking of Missouri Counties)

Note: All 115 counties of Missouri are ranked by most to least need of attention. Color-coding is based on quintile ranking.

Health System and Safety Net Structure
(Counties By Composite and Individual Ranks)

	County Name	HMO Penetration %	Medicare Managed Care Penetration %	HMO Competition Index	OB/GYN per 100,000	Internists per 100,000	Primary Pediatrics per 100,000	General Primary Care Physicians per 100,000	Composite Health Care Delivery System
1	Shannon	91	115	106	115	115	115	110	767
2	Putnam	109	115	93	115	115	115	100	762
3	Mercer	93	115	99	115	115	115	81	733
4	Bollinger	96	115	57	115	115	115	114	727
5	McDonald	80	115	96	115	115	115	88	724
6	Carter	98	115	50	115	115	115	104	712
7	Clark	115	115	114	115	115	115	21	710
8	Lewis	115	115	76	115	115	115	49	700
9	Oregon	92	115	100	115	62	115	101	700
10	Andrew	29	115	90	115	115	115	111	690
11	DeKalb	72	115	95	115	70	115	106	688
12	Mississippi	115	115	63	115	115	115	43	681
13	New Madrid	115	115	77	115	29	115	115	681
14	Knox	101	115	75	115	115	115	36	672
15	Ralls	69	115	46	115	115	115	96	671
16	Atchison	87	115	112	115	115	115	7	666
17	Schuyler	108	115	94	115	115	115	4	666
18	Daviess	63	52	91	115	115	115	109	660
19	Holt	64	115	98	115	34	115	99	640
20	Shelby	88	115	16	115	115	115	76	640
21	Worth	67	115	111	115	115	115	2	640
22	Maries	46	115	32	115	115	115	90	628
23	Scotland	105	115	59	115	115	115	3	627
24	Chariton	50	115	58	115	115	115	58	626
25	Ozark	84	43	78	115	115	115	72	622
26	Monroe	53	115	36	115	115	115	70	619
27	Wayne	94	45	41	115	115	115	74	599
28	Pike	61	61	70	115	115	115	54	591
29	Harrison	81	115	107	115	56	20	89	583
30	Dallas	59	13	84	115	115	115	73	574
31	Osage	18	115	18	115	115	115	75	571
32	Douglas	71	26	73	115	115	115	55	570
33	Barton	38	115	105	115	44	115	37	569
34	Howard	14	115	43	115	115	115	47	564
35	Dent	68	115	71	115	31	115	45	560
36	Reynolds	79	34	101	115	9	115	107	560
37	Moniteau	27	115	25	115	115	115	46	558
38	Sullivan	102	115	53	115	115	15	41	556
39	Hickory	73	17	86	115	58	115	91	555
40	Cooper	24	115	45	115	76	115	60	550

Health System and Safety Net Structure
(Counties By Composite and Individual Ranks)

	County Name	HMO Penetration %	Medicare Managed Care Penetration %	HMO Competition Index	OB/GYN per 100,000	Internists per 100,000	Primary Pediatrics per 100,000	General Primary Care Physicians per 100,000	Composite Health Care Delivery System
41	Grundy	89	115	92	24	64	115	34	533
42	Macon	85	115	83	115	33	34	68	533
43	Webster	25	6	72	115	115	115	84	532
44	Texas	82	36	97	115	43	115	40	528
45	Stone	60	15	65	115	72	115	85	527
46	Dade	41	16	69	115	115	115	53	524
47	Perry	90	115	49	15	78	115	52	514
48	Bates	78	41	23	115	54	115	87	513
49	Ripley	106	60	44	115	49	115	24	513
50	Caldwell	43	54	35	115	55	115	92	509
51	Pemiscot	115	115	115	9	28	30	97	509
52	Wright	62	28	82	115	77	115	29	508
53	Carroll	70	115	37	115	61	25	77	500
54	Gentry	54	55	110	115	115	12	39	500
55	Stoddard	107	68	48	115	42	44	56	480
56	Pulaski	77	32	89	35	71	115	59	478
57	Vernon	74	115	102	36	45	40	62	474
58	Benton	83	46	22	115	57	115	17	455
59	Lawrence	66	25	74	115	40	115	20	455
60	Ray	22	39	6	115	80	115	78	455
61	Livingston	76	59	108	5	30	115	61	454
62	Morgan	30	48	47	115	79	115	19	453
63	Dunklin	99	115	104	13	24	14	83	452
64	Cedar	49	21	68	115	50	115	25	443
65	Lincoln	9	18	11	115	63	115	108	439
66	Miller	17	56	38	115	53	115	44	438
67	Barry	42	20	81	115	48	115	15	436
68	Crawford	56	24	39	115	66	41	94	435
69	Nodaway	52	115	113	25	52	35	38	430
70	Iron	57	49	52	115	115	8	33	429
71	Jasper	65	70	85	28	51	36	82	417
72	Gasconade	23	31	8	115	73	115	51	416
73	Clinton	36	42	33	115	46	115	28	415
74	Callaway	5	58	13	115	69	115	27	402
75	Montgomery	16	30	15	115	41	115	66	398
76	Linn	95	62	31	115	47	33	13	396
77	Henry	26	44	19	115	65	115	8	392
78	Madison	55	50	55	115	15	28	65	383
79	Lafayette	11	37	3	115	74	115	23	378
80	Washington	10	27	30	115	39	42	113	376

Health System and Safety Net Structure
(Counties By Composite and Individual Ranks)

	County Name	HMO Penetration %	Medicare Managed Care Penetration %	HMO Competition Index	OB/GYN per 100,000	Internists per 100,000	Primary Pediatrics per 100,000	General Primary Care Physicians per 100,000	Composite Health Care Delivery System
81	Christian	31	8	60	41	81	49	95	365
82	Scott	115	115	10	23	23	22	57	365
83	Saline	7	115	42	26	22	115	35	362
84	St. Clair	35	40	29	115	17	115	11	362
85	Cass	19	7	7	115	75	47	86	356
86	Warren	1	1	17	115	68	46	102	350
87	Pettis	39	69	62	21	36	39	79	345
88	Randolph	32	115	67	27	32	19	48	340
89	Buchanan	51	66	87	17	18	21	71	331
90	Cape Girardeau	103	115	56	11	7	6	32	330
91	Howell	86	51	79	40	25	31	6	318
92	Marion	97	67	64	20	12	16	30	306
93	Laclede	45	11	109	39	35	10	50	299
94	Johnson	40	35	4	34	60	37	80	290
95	Phelps	75	53	88	22	16	18	18	290
96	Adair	104	115	24	16	4	24	1	288
97	Butler	100	64	51	6	6	13	31	271
98	Polk	48	14	66	38	38	45	22	271
99	Jefferson	20	4	9	37	59	38	103	270
100	Taney	58	19	80	32	13	48	12	262
101	Platte	28	23	5	33	67	26	67	249
102	Camden	47	38	54	12	26	27	42	246
103	Ste. Genevieve	33	29	14	14	20	23	112	245
104	St. Charles	21	3	26	29	21	17	105	222
105	Newton	44	47	103	1	5	5	16	221
106	Franklin	6	2	28	30	37	32	69	204
107	St. Louis City	13	9	40	7	1	1	98	169
108	St. Francois	4	33	21	31	27	43	9	168
109	Clay	12	22	2	19	19	29	63	166
110	Audrain	15	57	27	18	11	11	26	165
111	Greene	34	12	61	8	10	9	14	148
112	Boone	37	63	34	2	2	2	5	145
113	St. Louis	8	5	20	4	3	4	93	137
114	Cole	2	65	12	3	14	7	10	113
115	Jackson	3	10	1	10	8	3	64	99

Source: Computation of these ranks is based on HMO data from Department of Insurance, 2003, and CHIME, Department of Health and Senior Services
Note: 1- Missouri counties, with individual and composite ranking, by delivery of health management and care
2- Color-coding shows the quintile grouping

Appendix - 3(f)

GIS Maps:

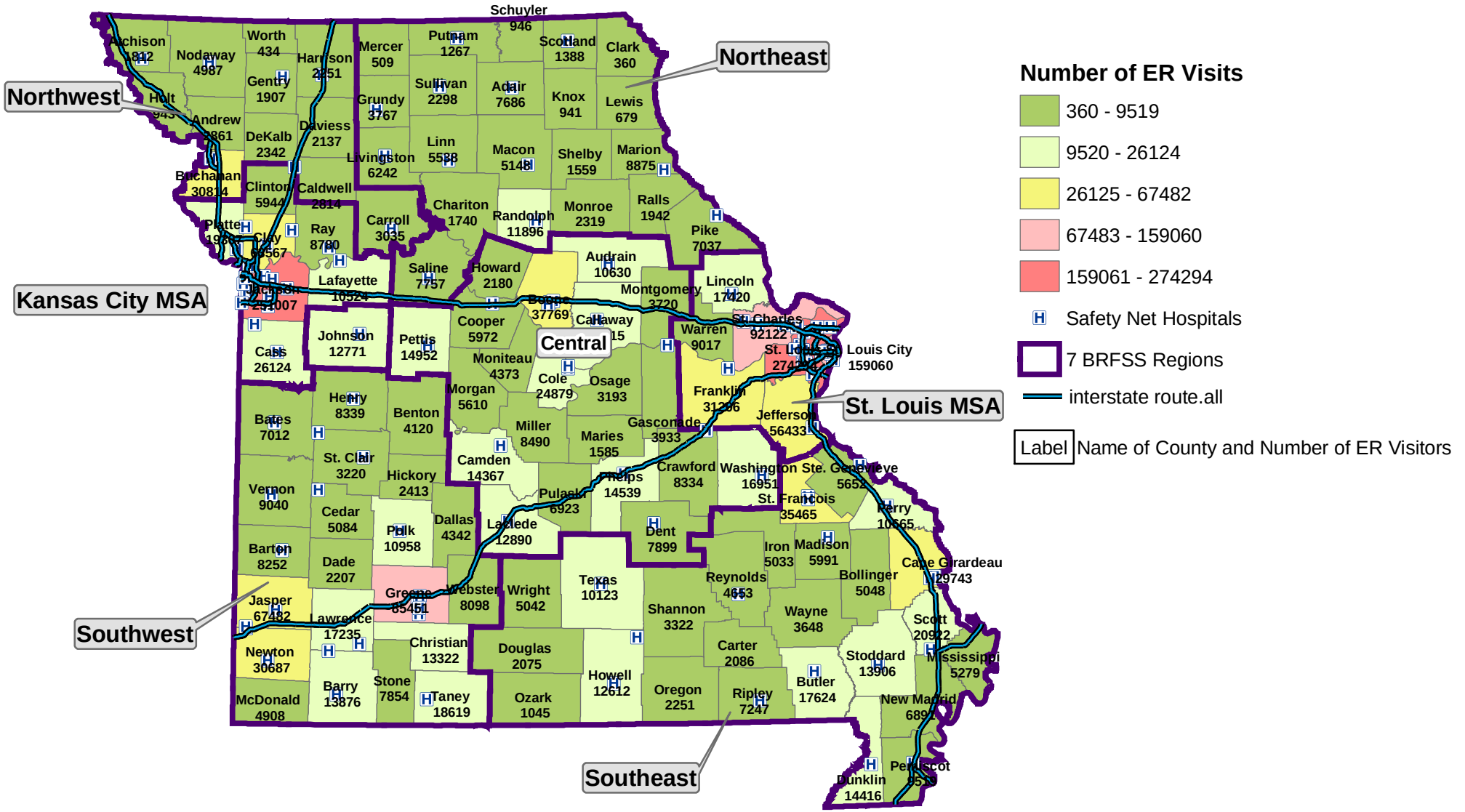
Emergency Room Visits

(Different Pay Sources)

by Missouri Counties

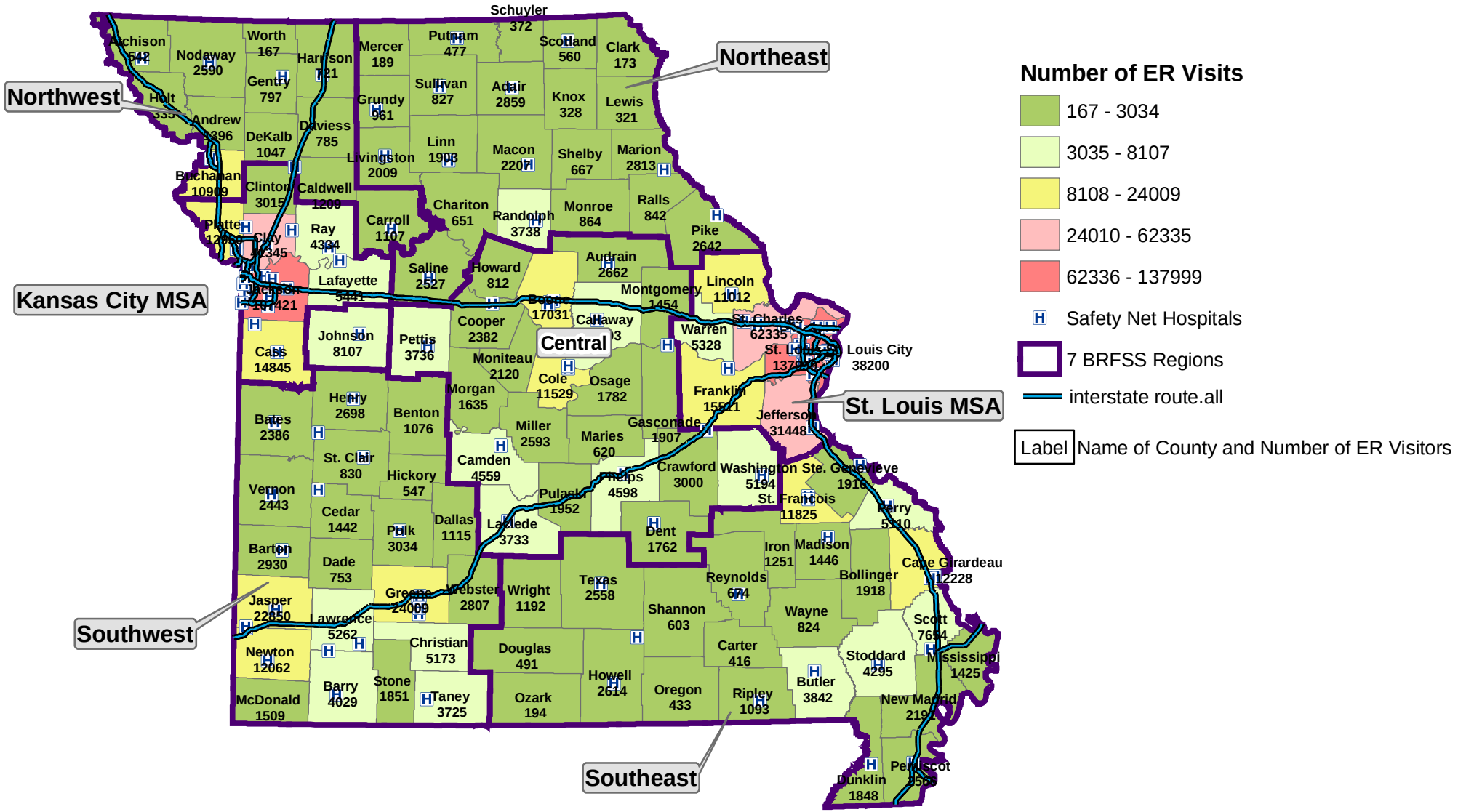
Three perspectives: *Numbers, Proportion, and Rate per 1,000*

Number of Emergency Room Visits by Missouri Counties, 2002



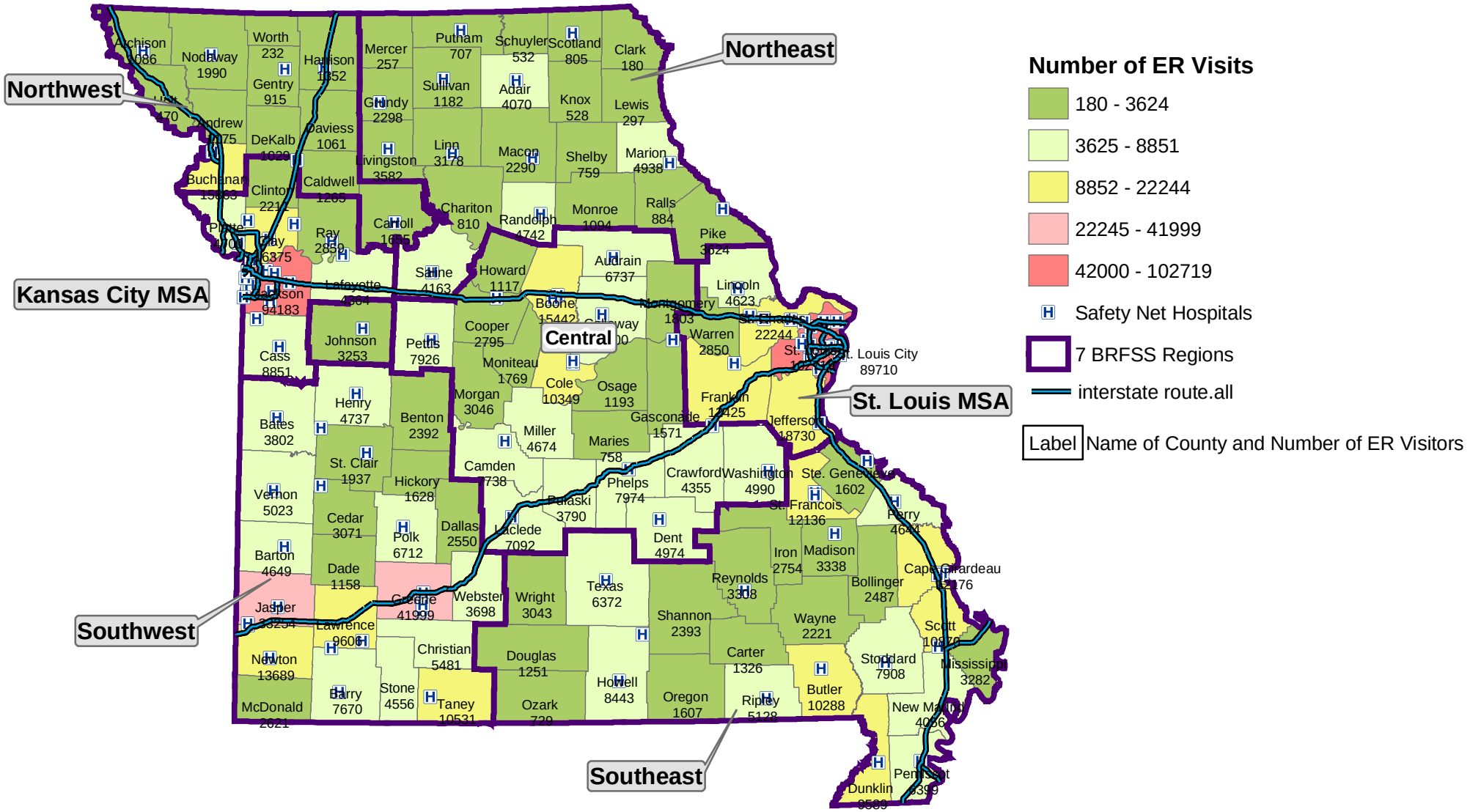
Source: Missouri Department of Health and Senior Services

Number of Emergency Room Visits by Privately Insured Missourians by Missouri Counties, 2002



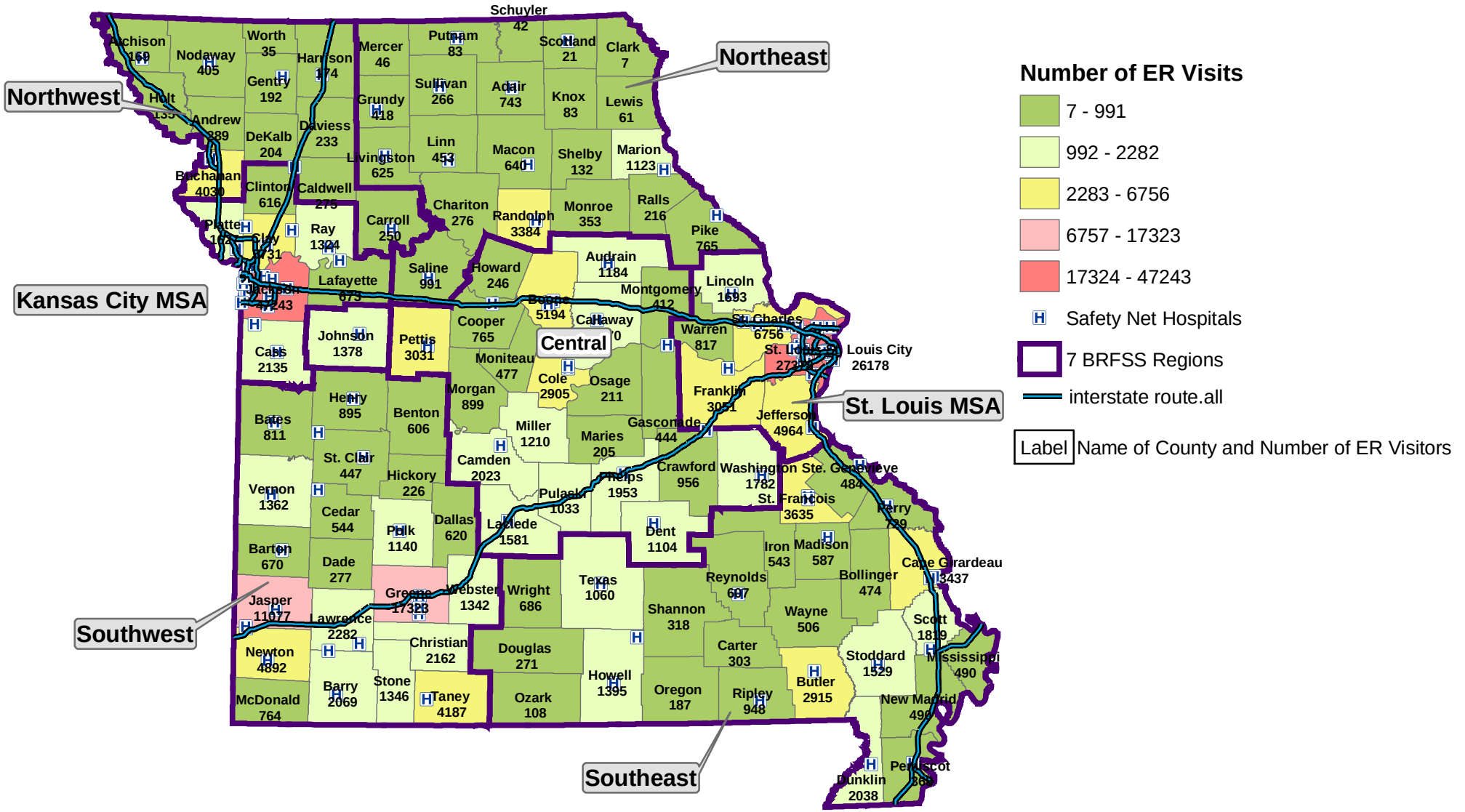
Source: Missouri Department of Health and Senior Services

Number of Emergency Room Visits by Publicly Insured Missourians by Missouri Counties, 2002



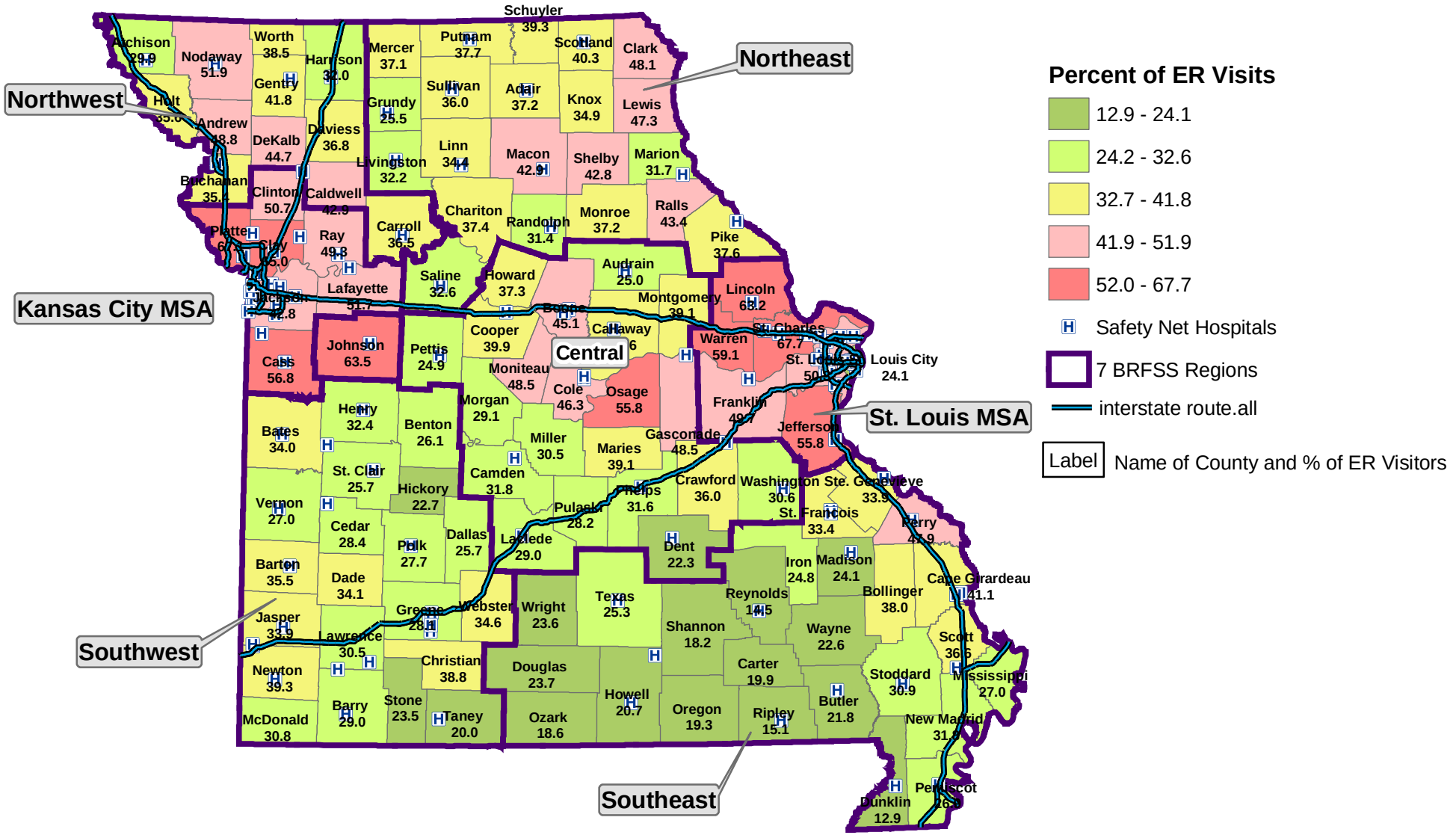
Source: Missouri Department of Health and Senior Services

Number of Emergency Room Visits by Uninsured Missourians by Missouri Counties, 2002



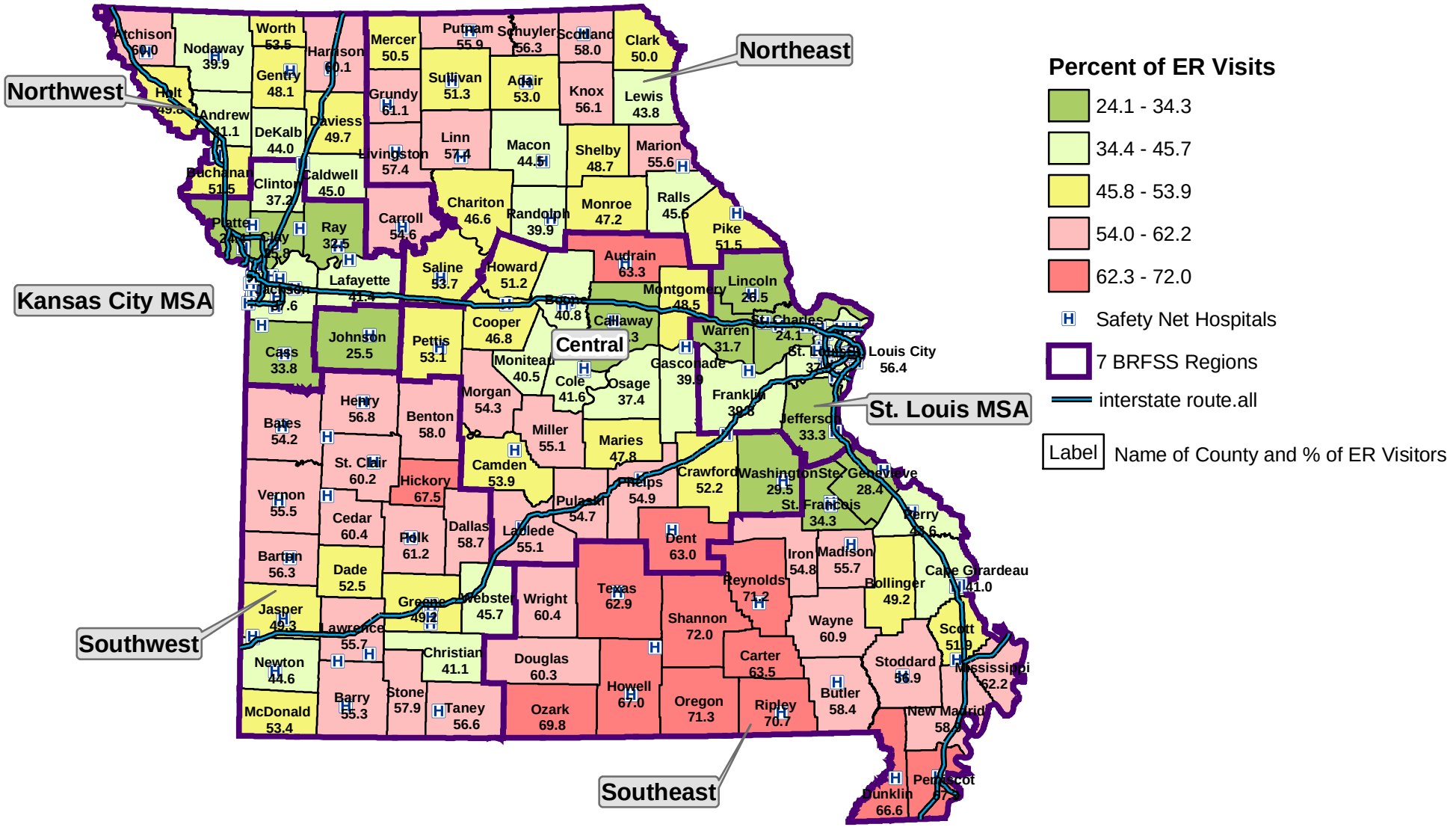
Source: Missouri Department of Health and Senior Services

Percent of Emergency Room Visits by Privately Insured Missourians by Missouri Counties, 2002



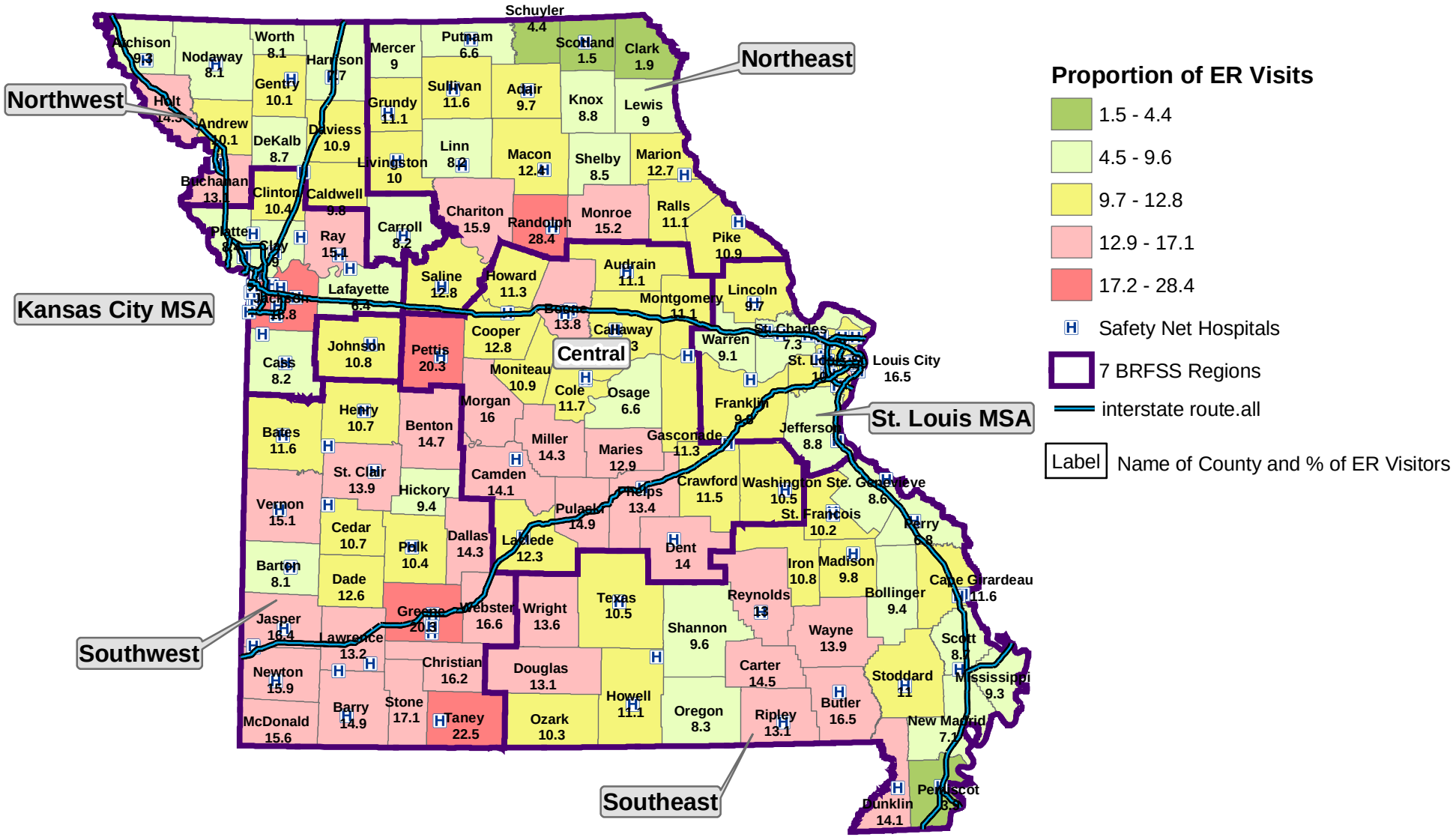
Source: Missouri Department of Health and Senior Services

Percent of Emergency Room Visits by Publicly Insured Missourians by Missouri Counties, 2002



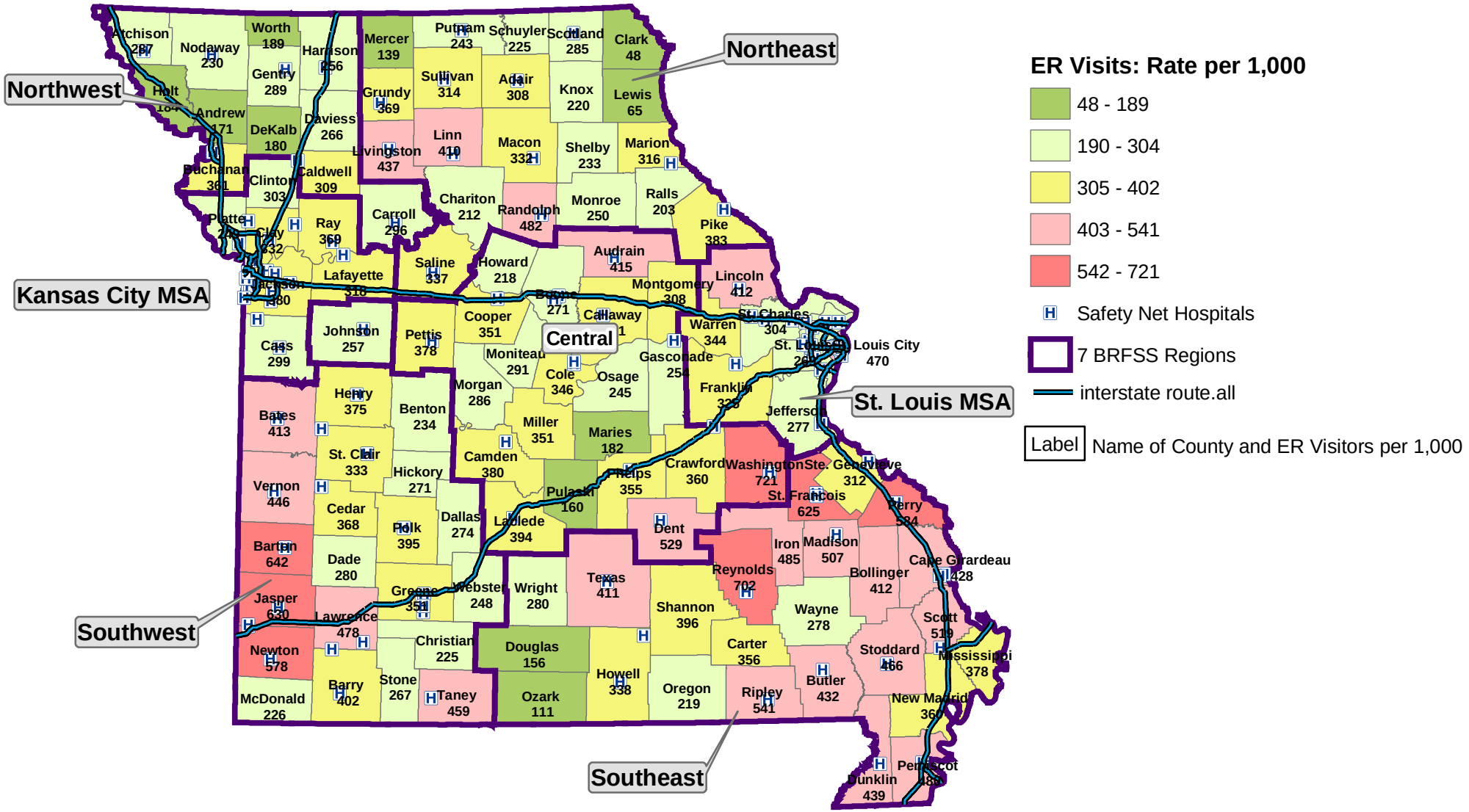
Source: Missouri Department of Health and Senior Services

Percent of Emergency Room Visits by Uninsured Missourians by Missouri Counties, 2002



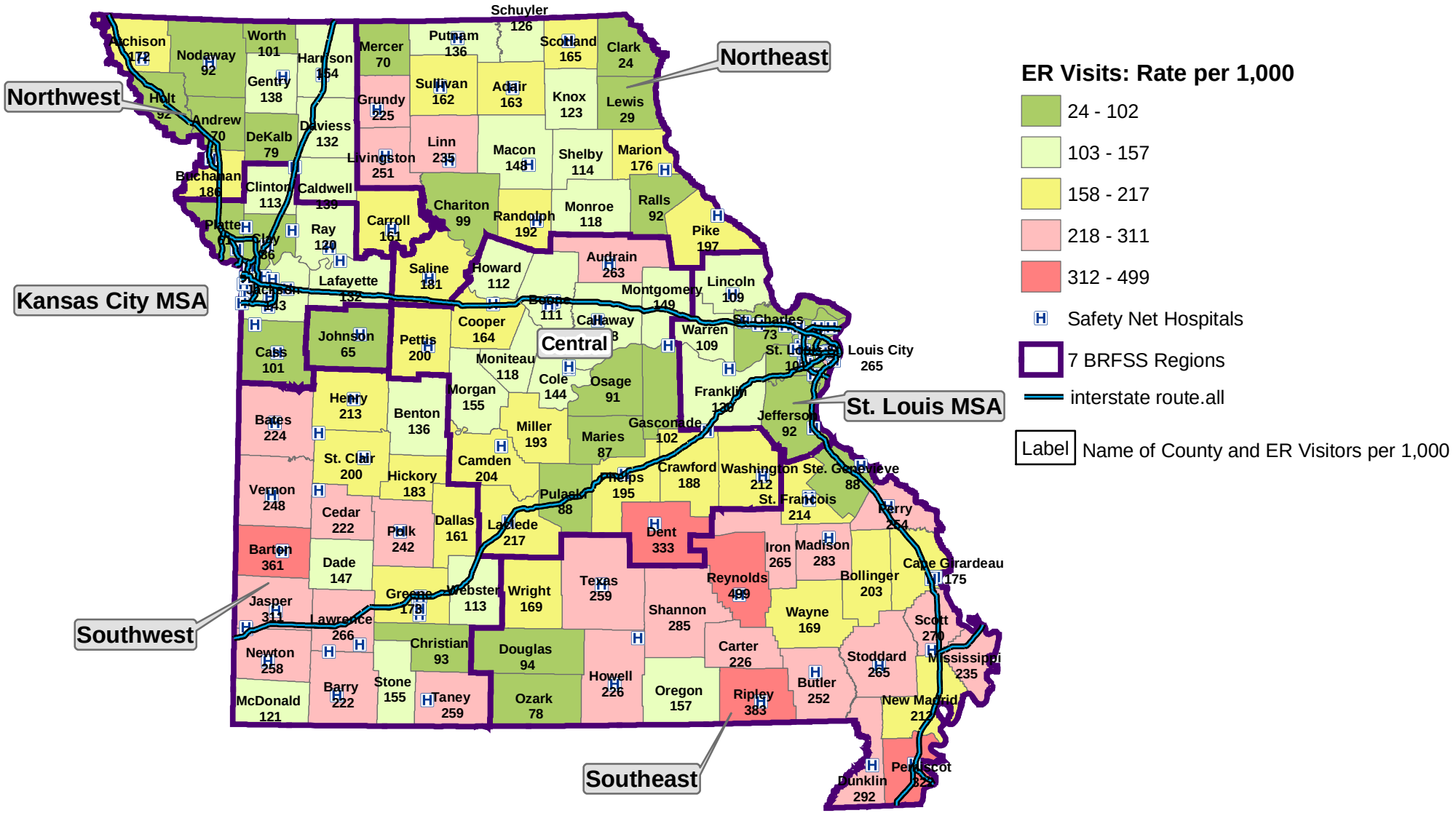
Source: Missouri Department of Health and Senior Services

Emergency Room Visits by Missourians: Rate per 1,000 by Missouri Counties, 2002



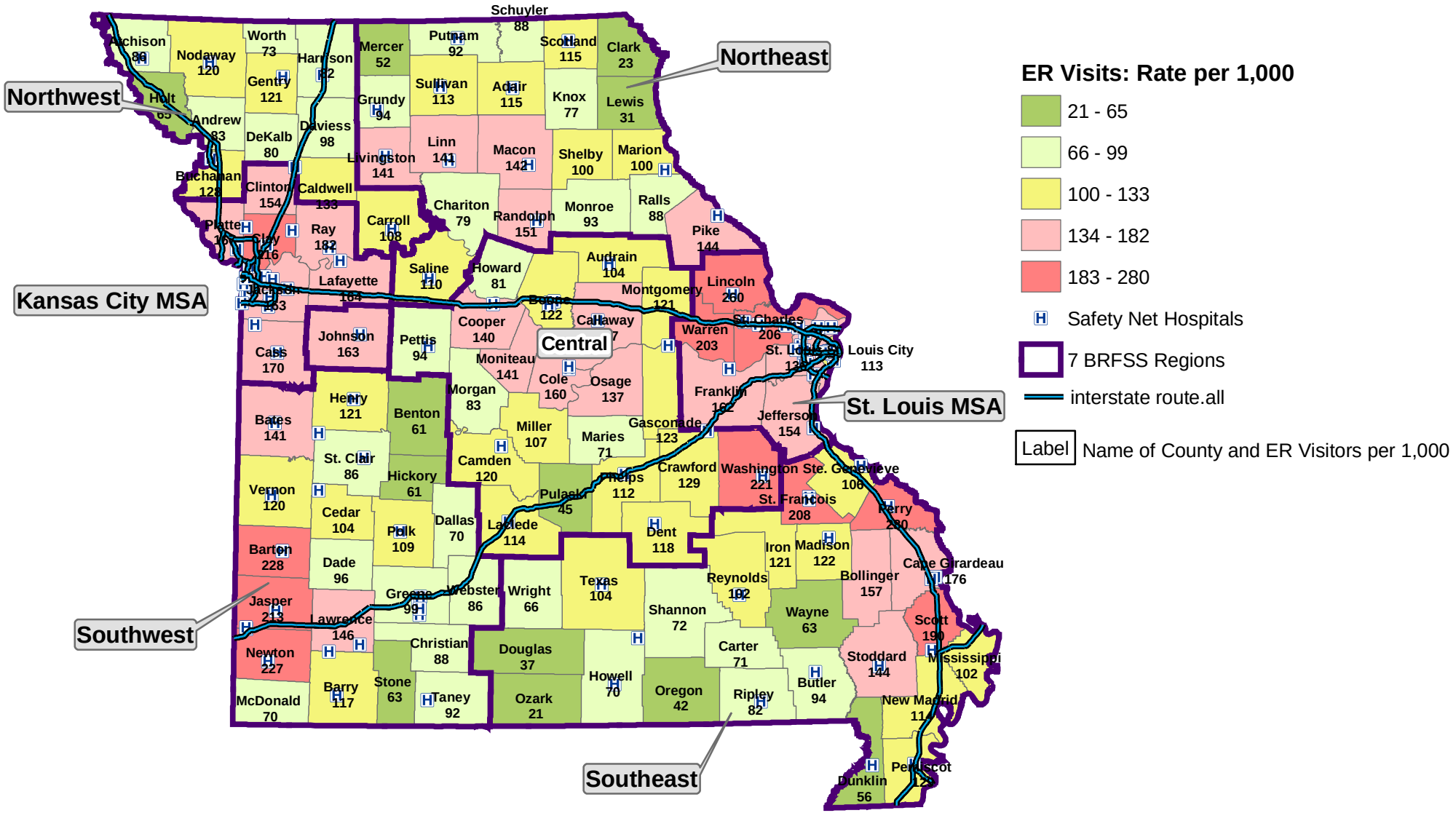
Source: Missouri Department of Health and Senior Services

Emergency Room Visits by Publicly Insured Missourians: Rate per 1,000 by Missouri Counties, 2002



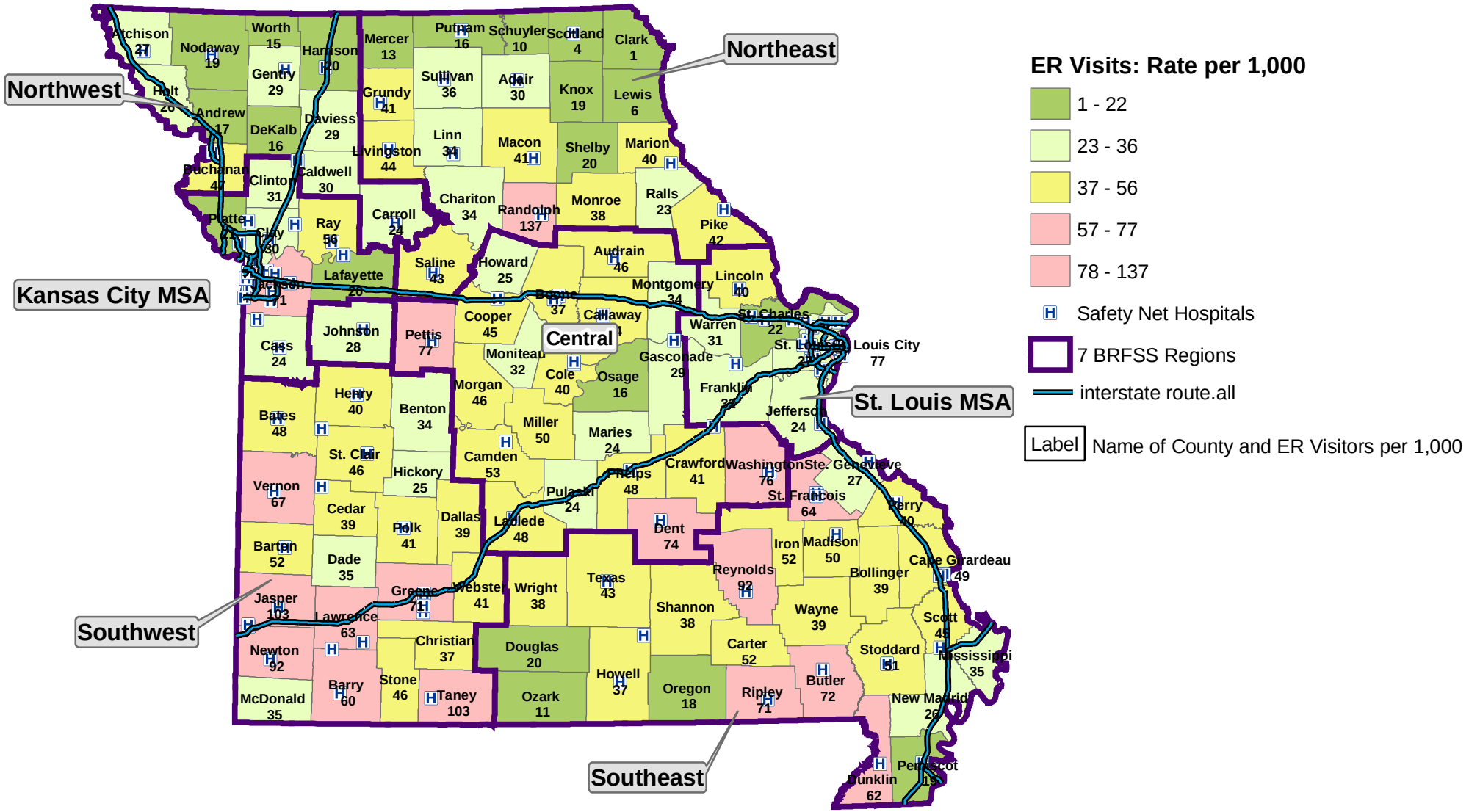
Source: Missouri Department of Health and Senior Services

Emergency Room Visits by Privately Insured Missourians: Rate per 1,000 by Missouri Counties, 2002



Source: Missouri Department of Health and Senior Services

Emergency Room Visits by Uninsured Missourians: Rate per 1,000 by Missouri Counties, 2002



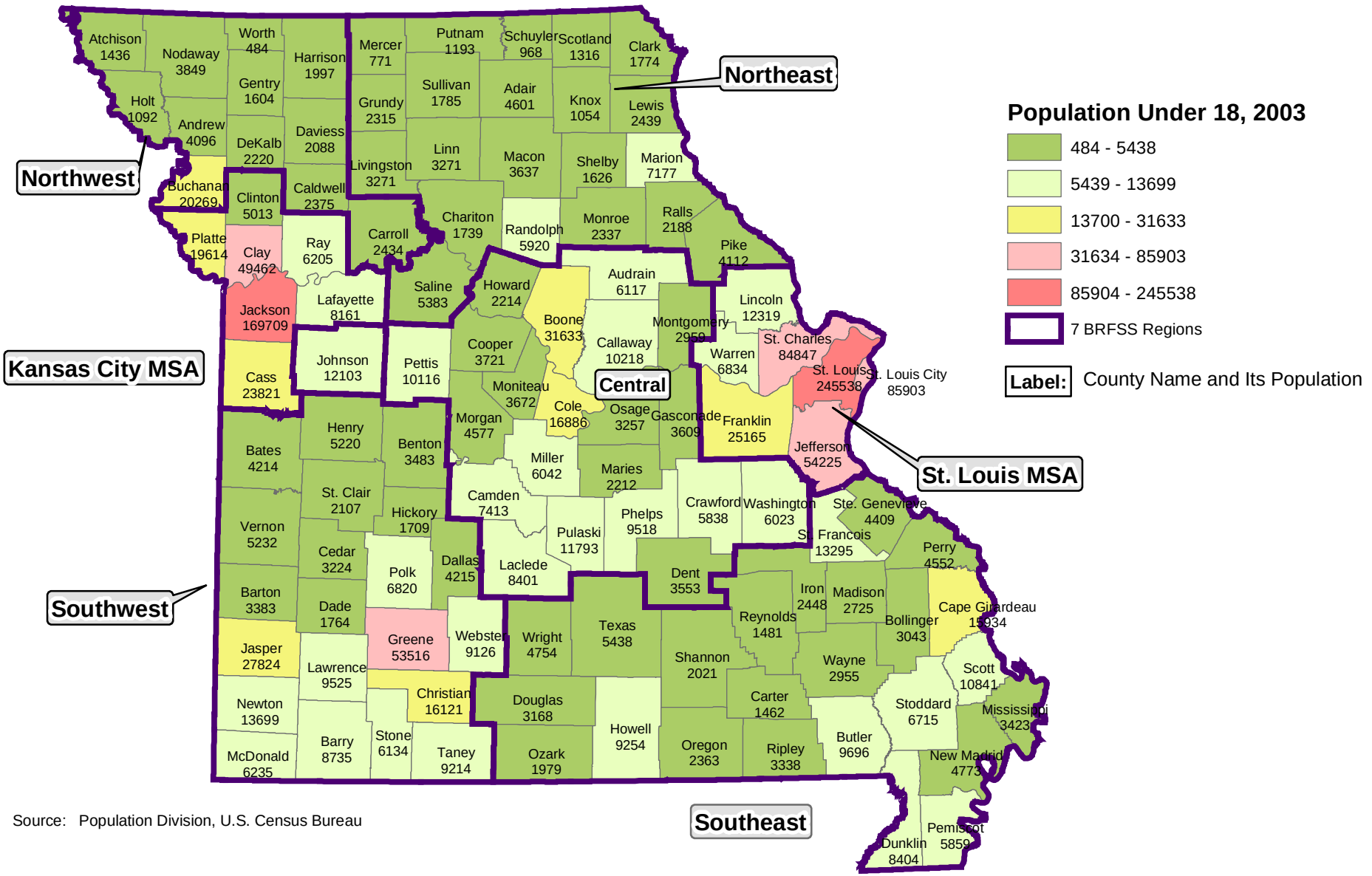
Source: Missouri Department of Health and Senior Services

Appendix – 4(a)

GIS Maps:

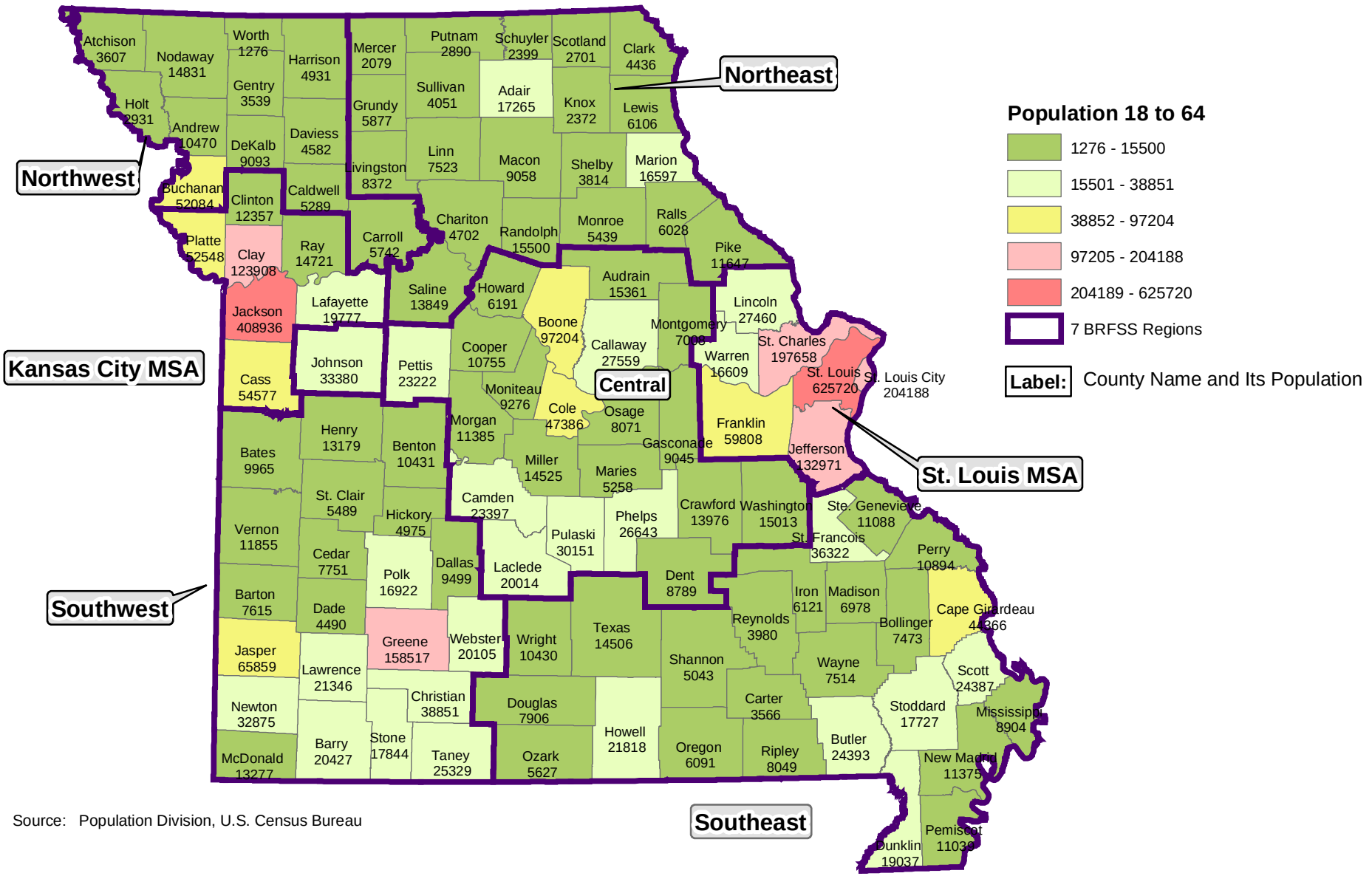
Population Growth Patterns and Distribution
(Different Age Groups)
by Missouri Counties

Population Under 18 Years Old by Missouri Counties, 2003



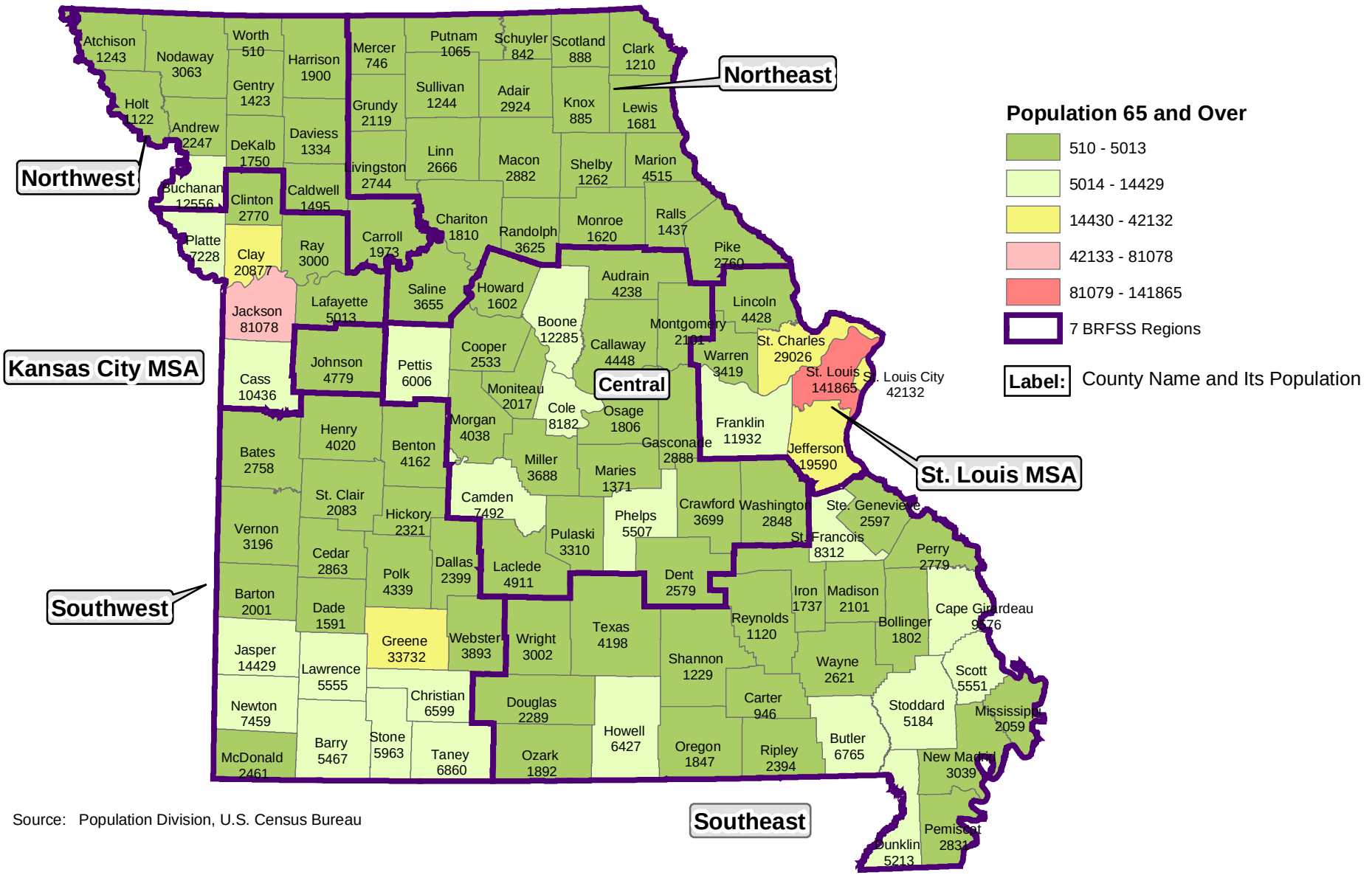
Source: Population Division, U.S. Census Bureau

Population 18-64 Years Old by Missouri Counties, 2003



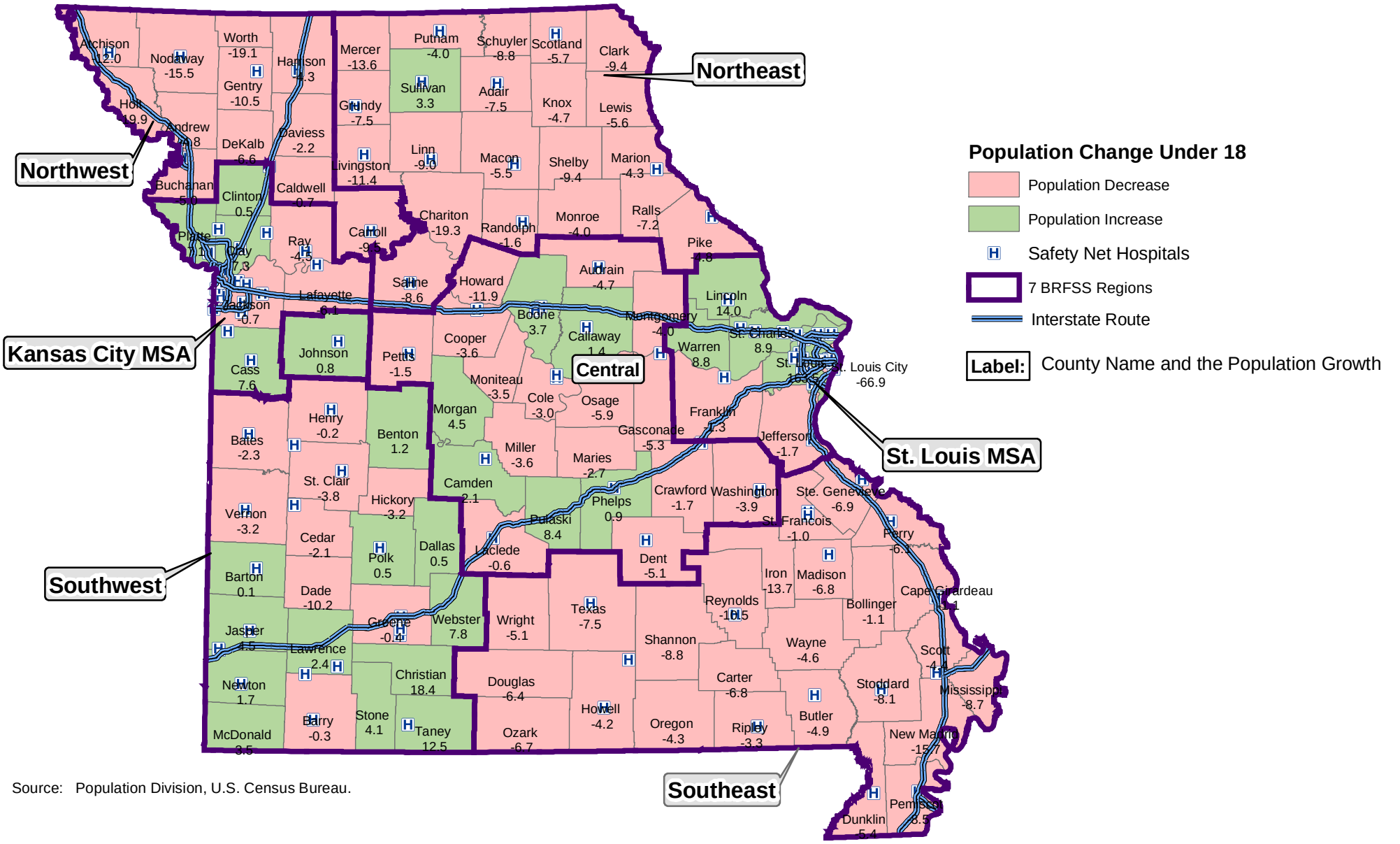
Source: Population Division, U.S. Census Bureau

Population 65 Years and Older by Missouri Counties, 2003



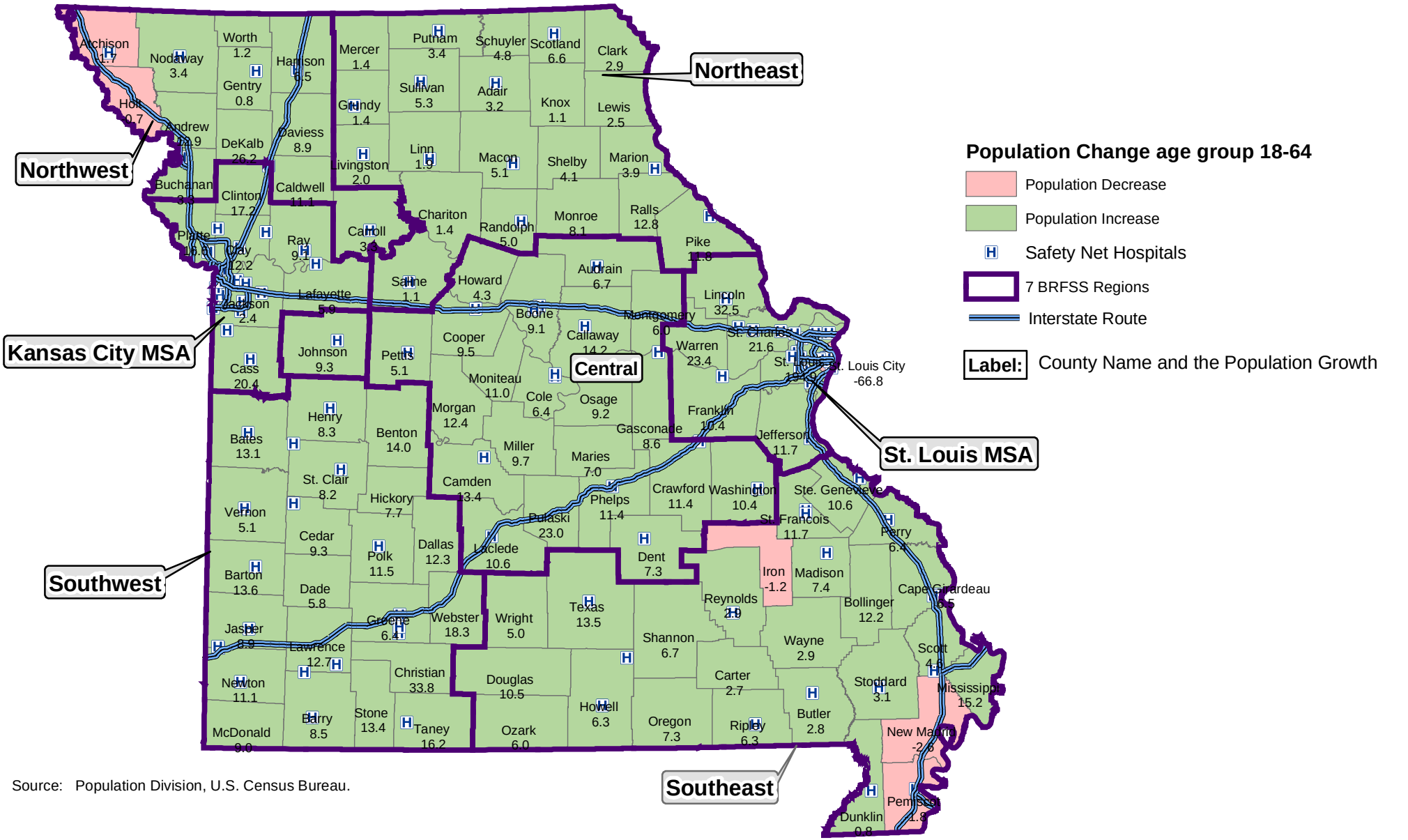
Source: Population Division, U.S. Census Bureau

Change in the Population of Under 18 Year Old Missourians by Missouri Counties1997-2003



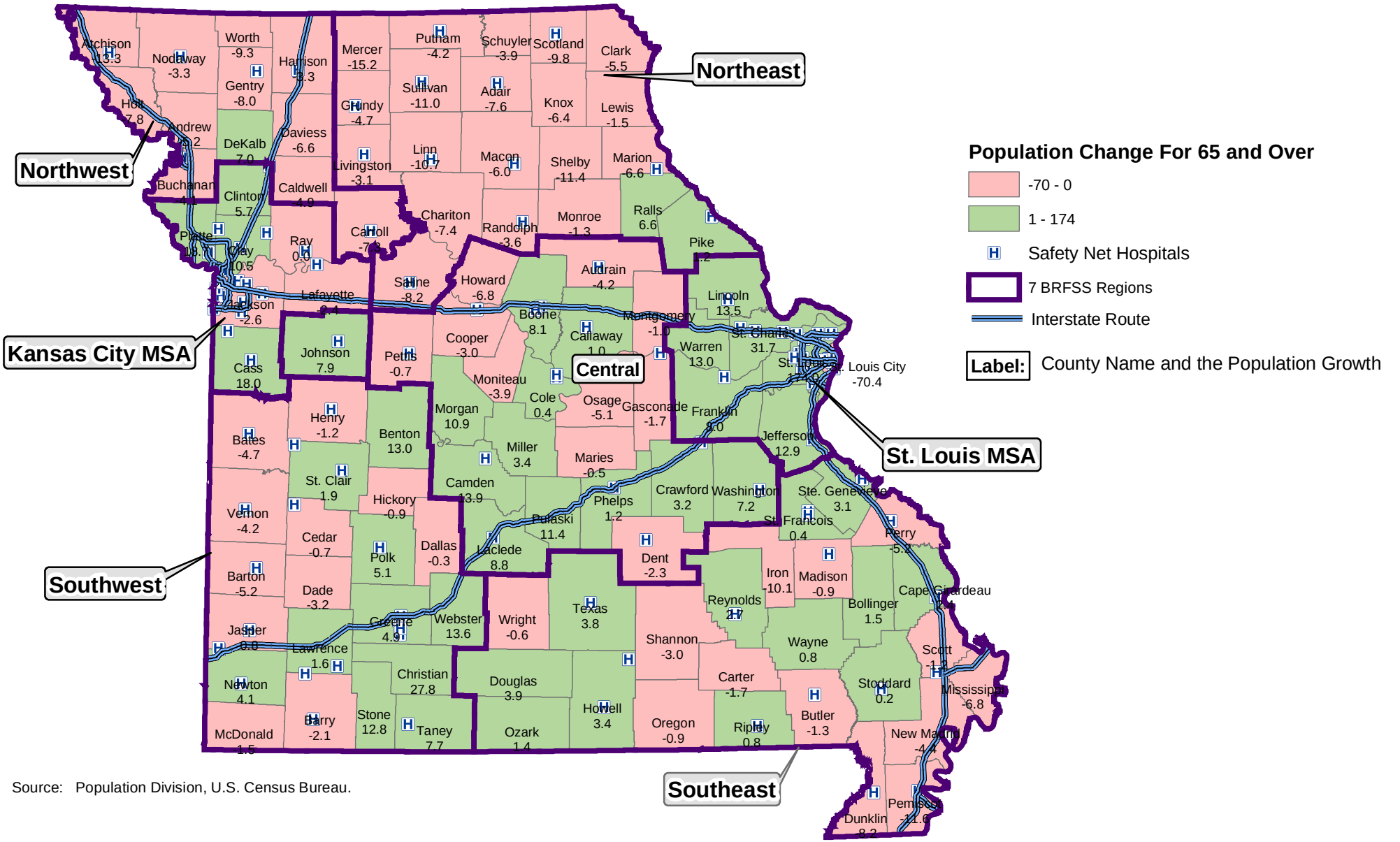
Source: Population Division, U.S. Census Bureau.

Change in the Population of 18-64 Year Old Missourians by Missouri Counties1997-2003



Source: Population Division, U.S. Census Bureau.

Change in the Population of 65 Year and Older Missourians by Missouri Counties1997-2003



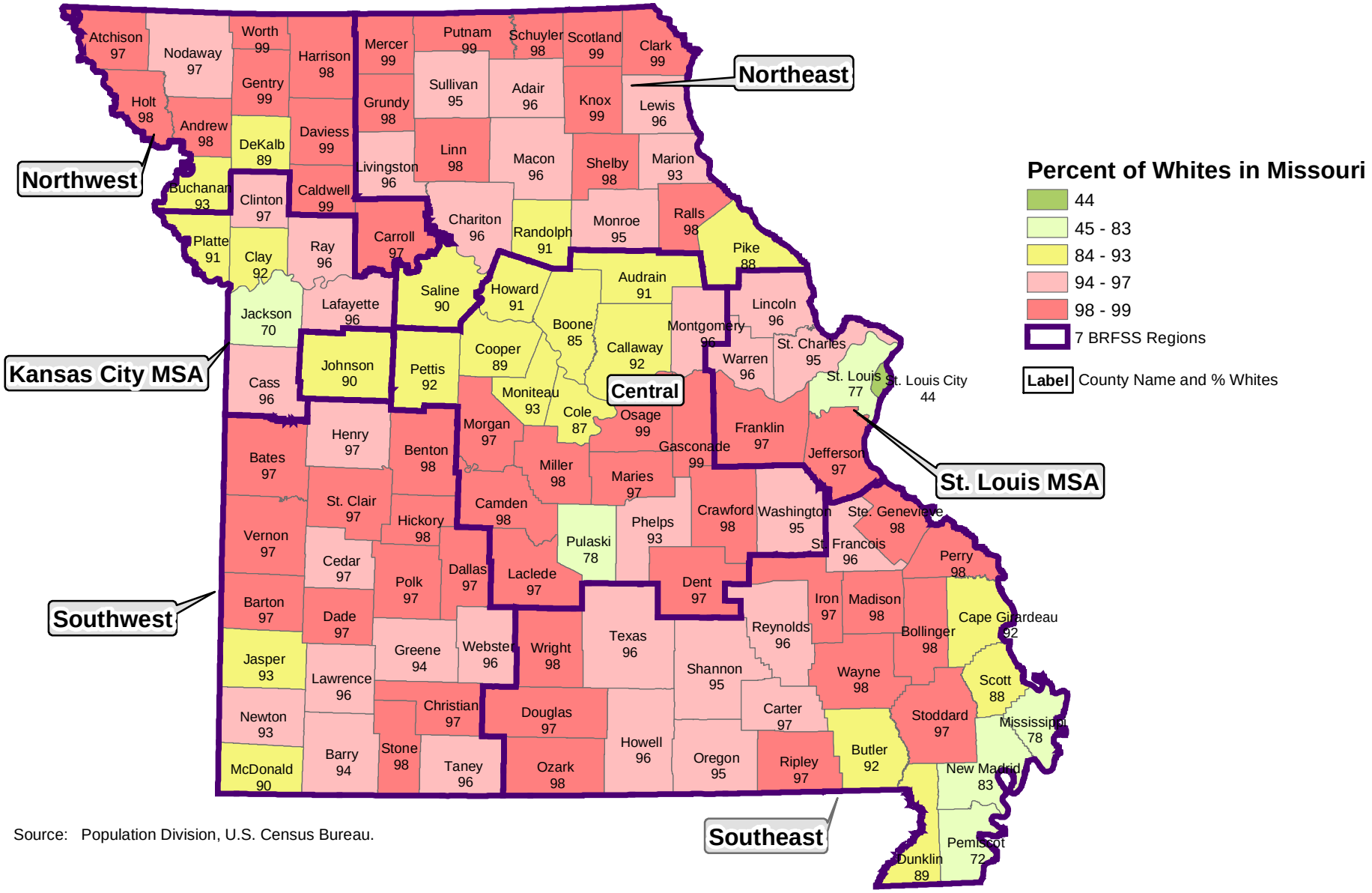
Source: Population Division, U.S. Census Bureau.

Appendix – 4(b)

GIS Maps:

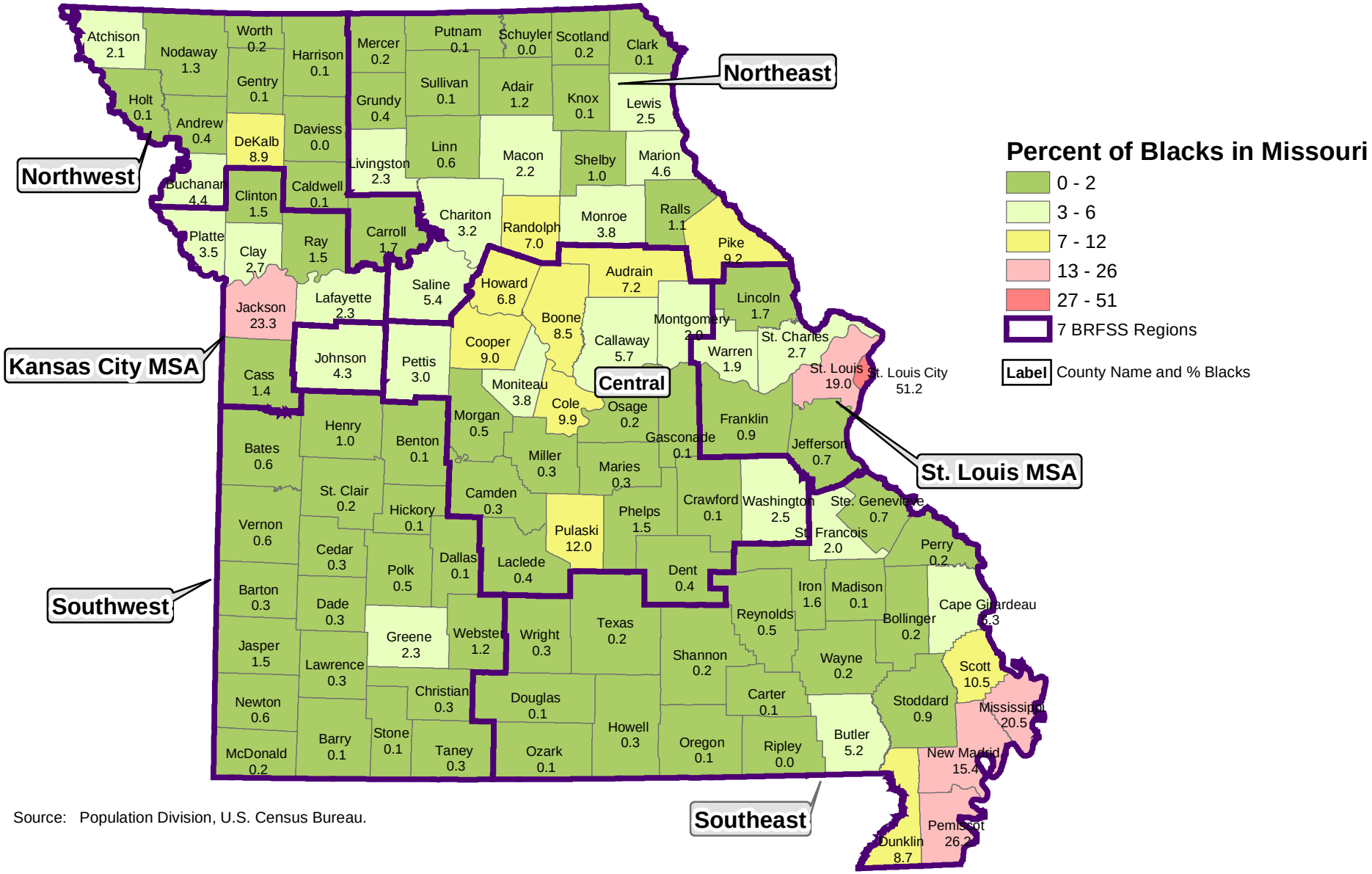
Population of Missouri
(by Major Races)
by Missouri Counties

Missourians of White Race (Percent) by Missouri Counties, 2000



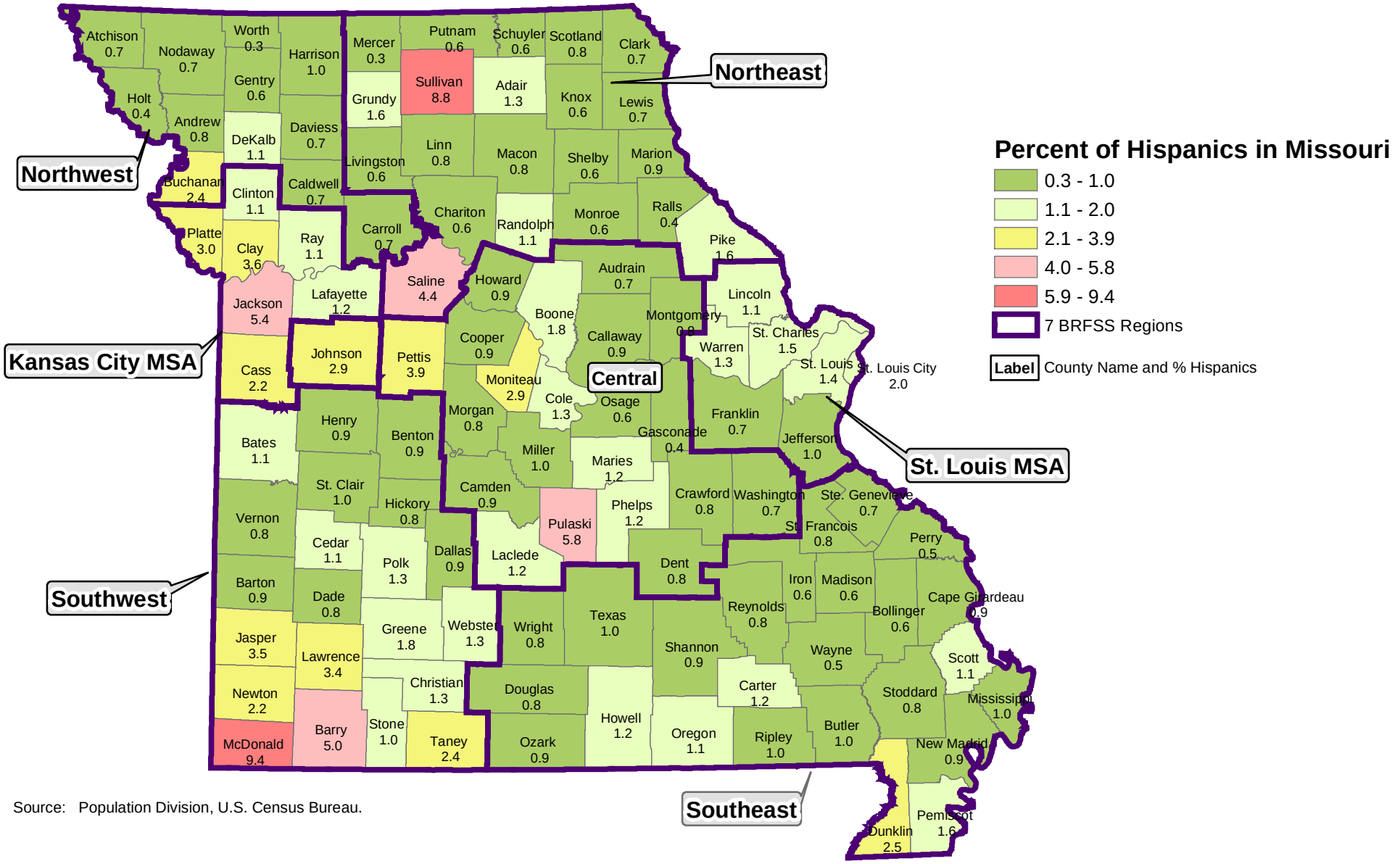
Source: Population Division, U.S. Census Bureau.

Missourians of Black Race (Percent) by Missouri Counties, 2000



Source: Population Division, U.S. Census Bureau.

Missourians of Hispanic Race (Percent) by Missouri Counties, 2000



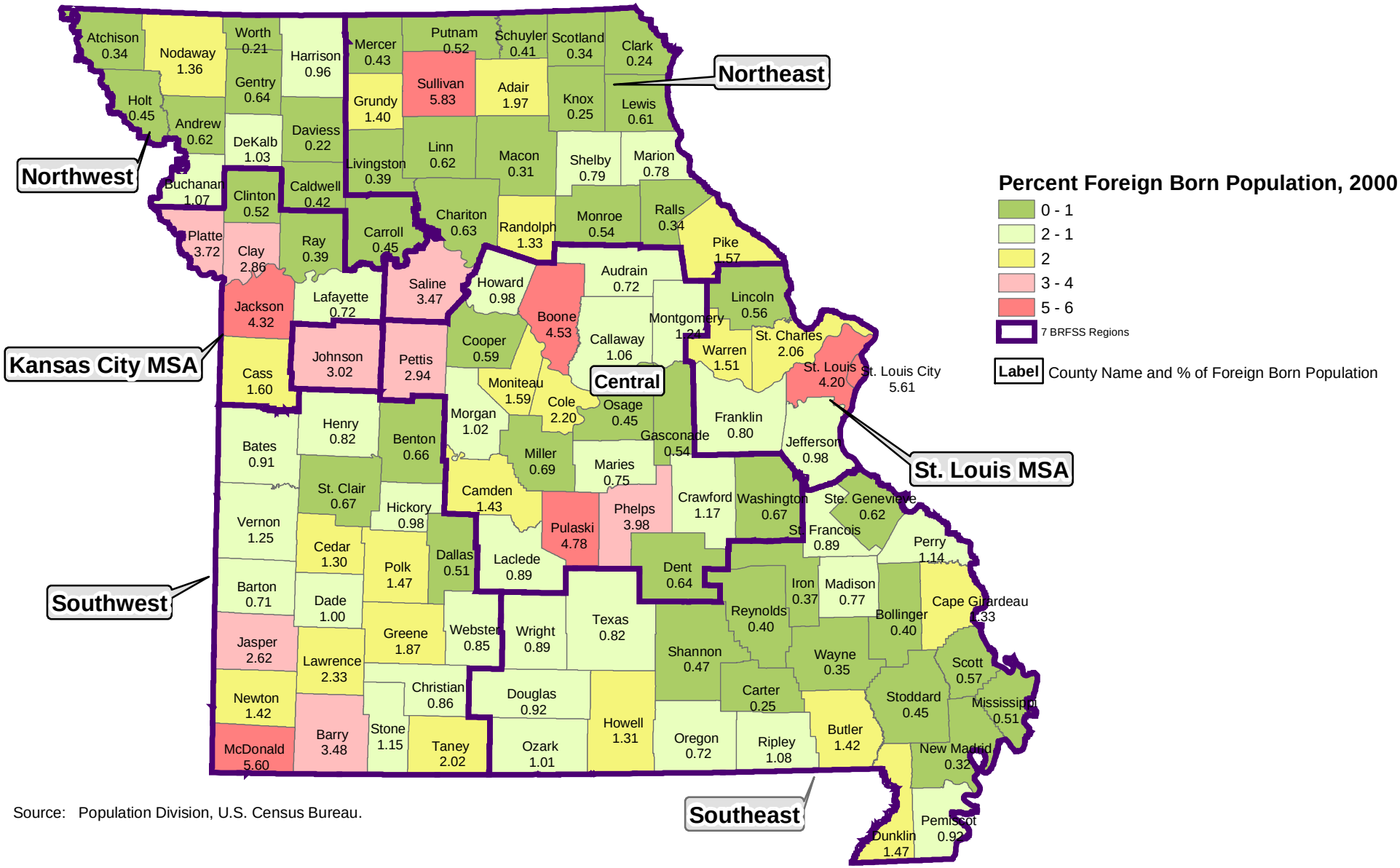
Source: Population Division, U.S. Census Bureau.

Appendix – 4(c)

GIS Maps:

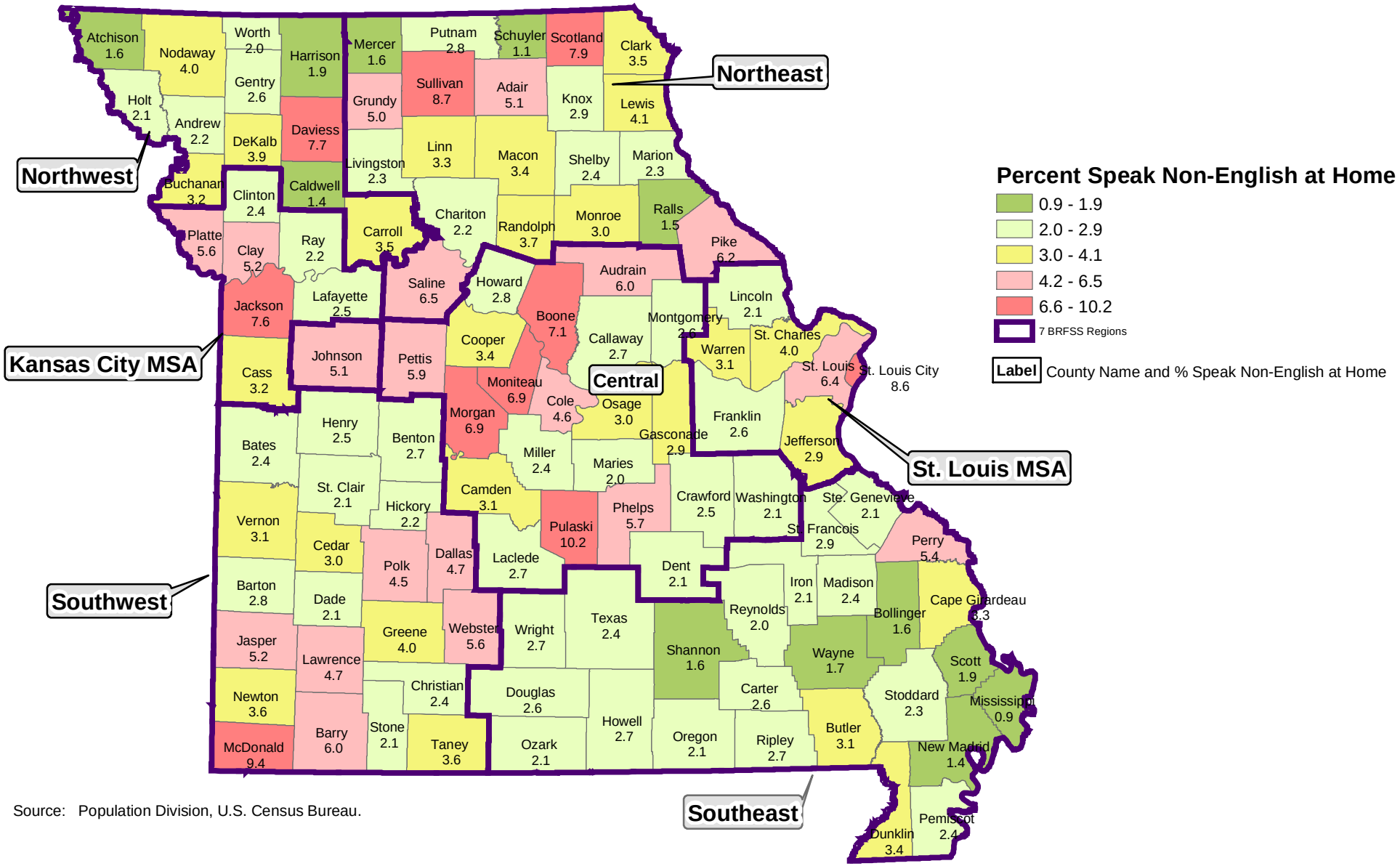
Foreign Born Population and the Use of English Language by Missouri Counties

Percent of Foreign Born Population by Missouri Counties, 2000



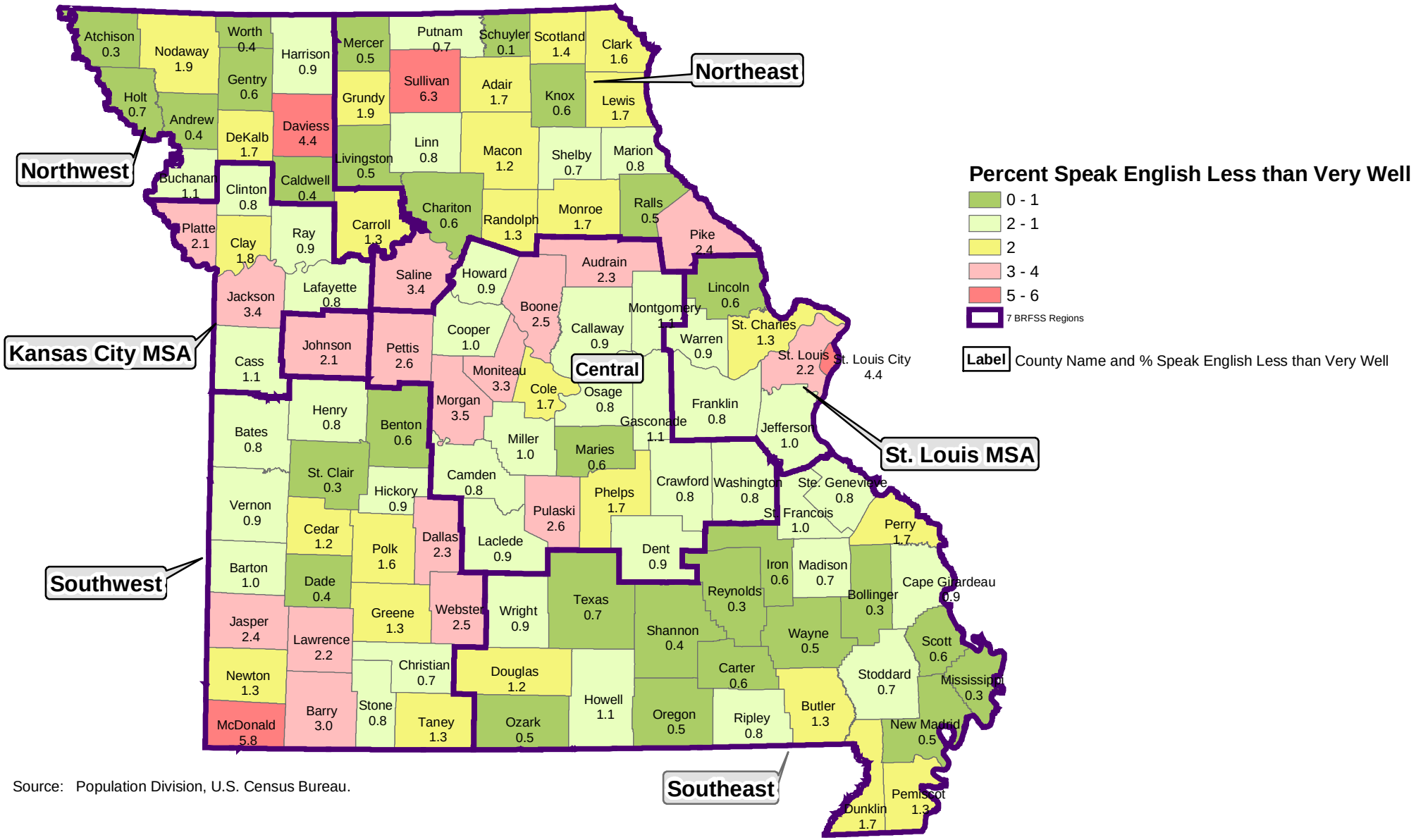
Source: Population Division, U.S. Census Bureau.

Percent Speak Non-English at Home by Missouri Counties, 2000



Source: Population Division, U.S. Census Bureau.

Percent Speak English Less Than Very Well by Missouri Counties, 2000



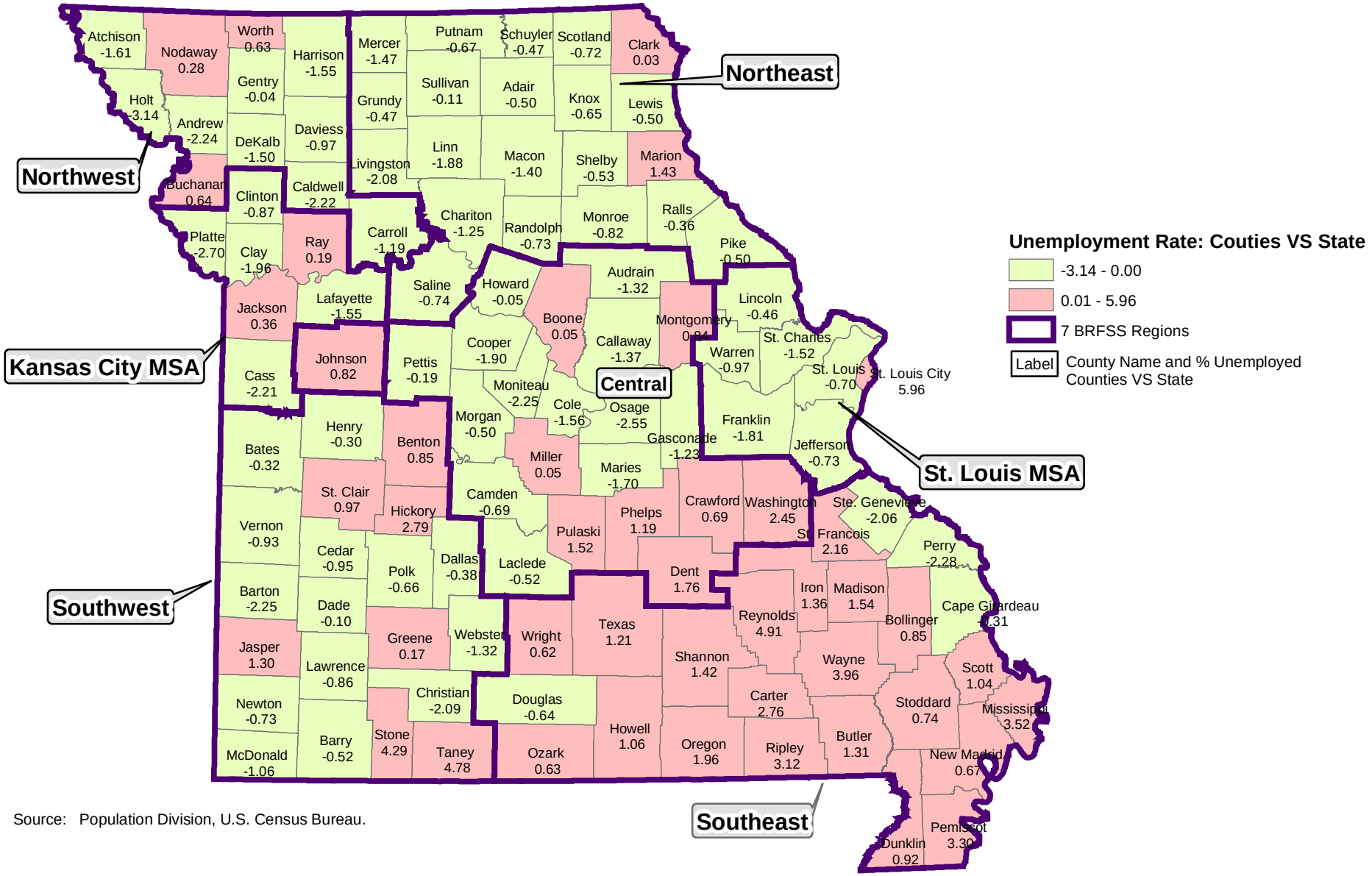
Source: Population Division, U.S. Census Bureau.

Appendix – 4(d)

GIS Maps:

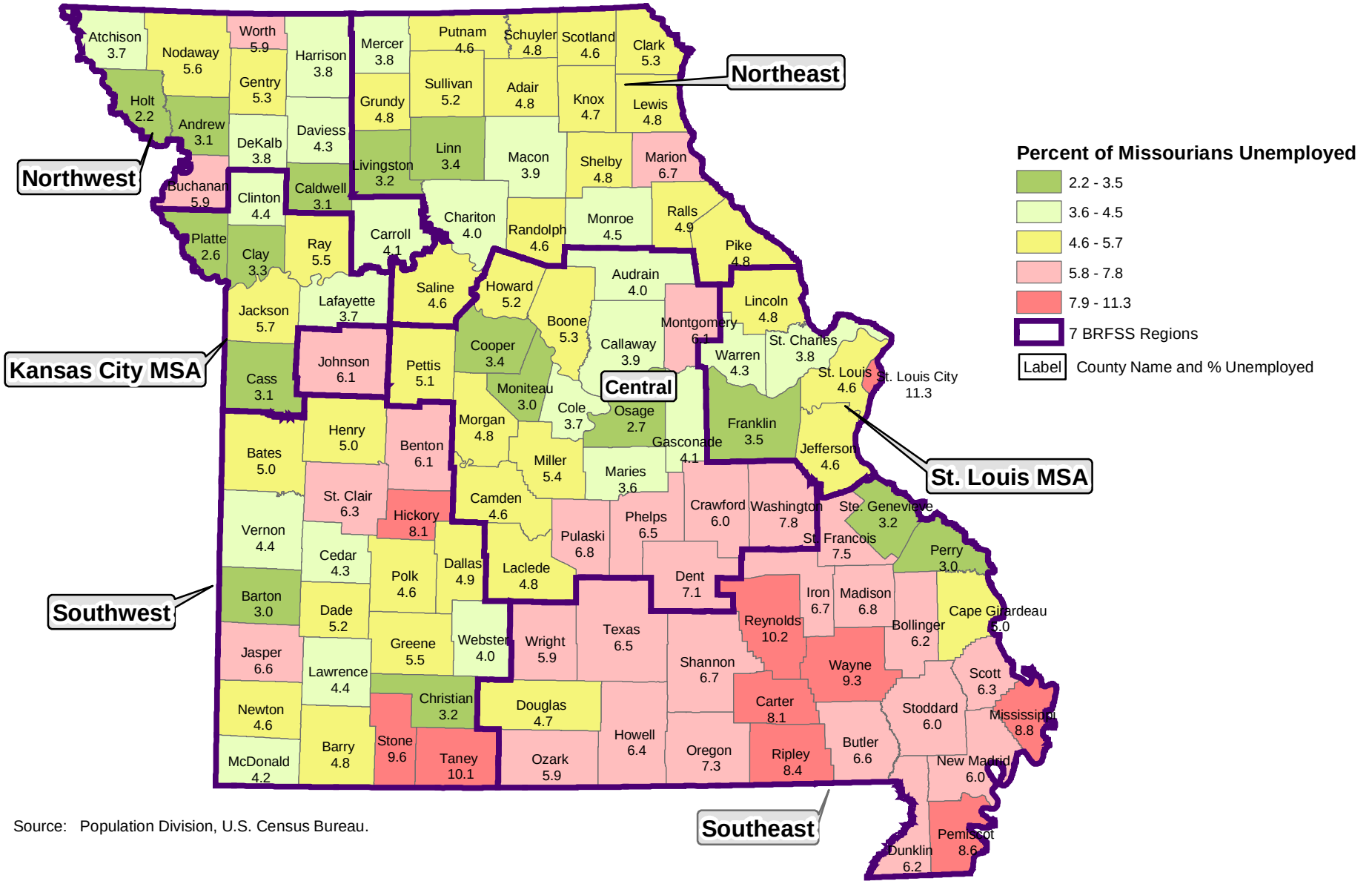
Economy of Missouri Counties

Percent Unemployed: Counties Compared to State by Missouri Counties, 2000



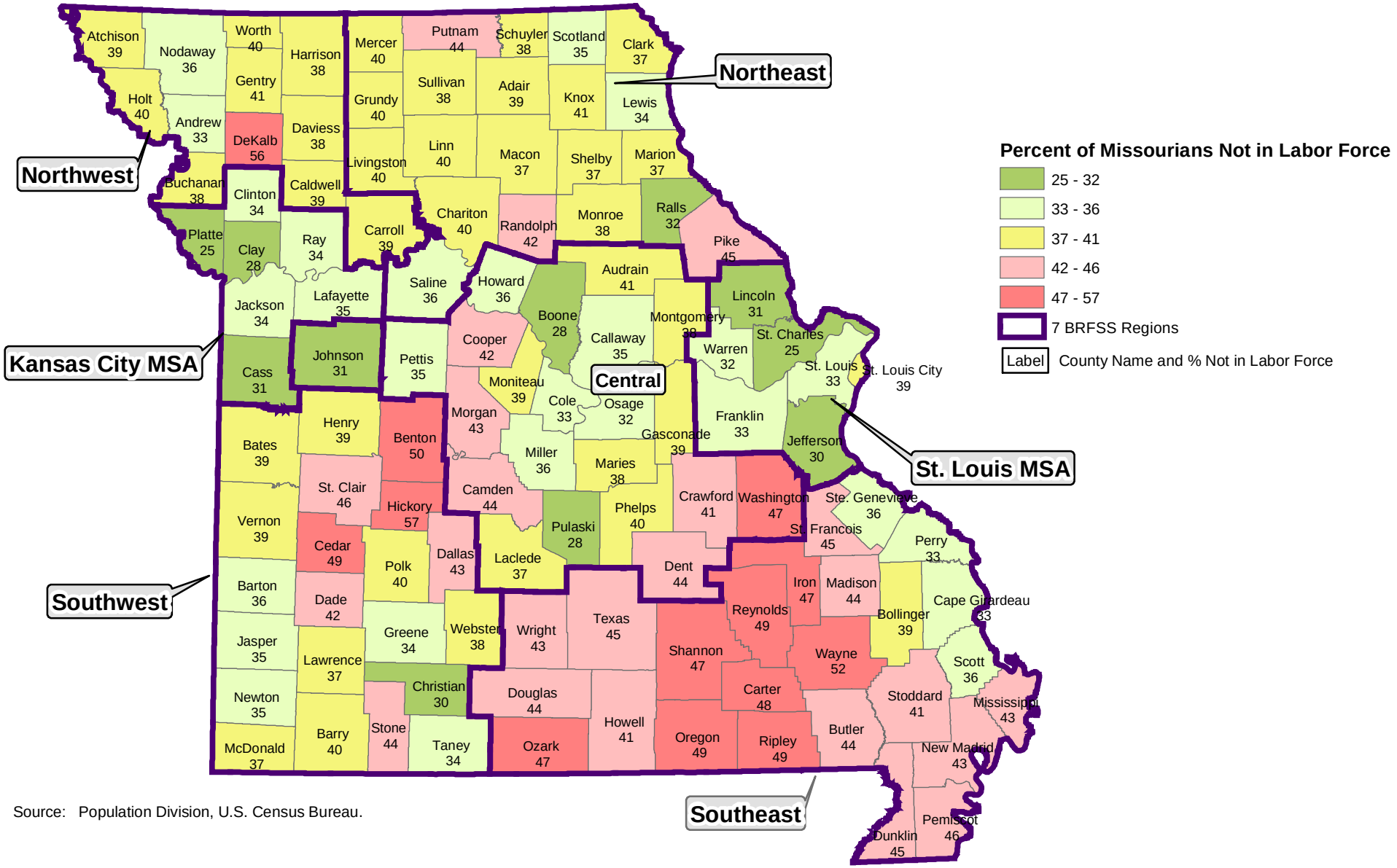
Source: Population Division, U.S. Census Bureau.

Percent of Missourians Unemployed by Missouri Counties, 2000



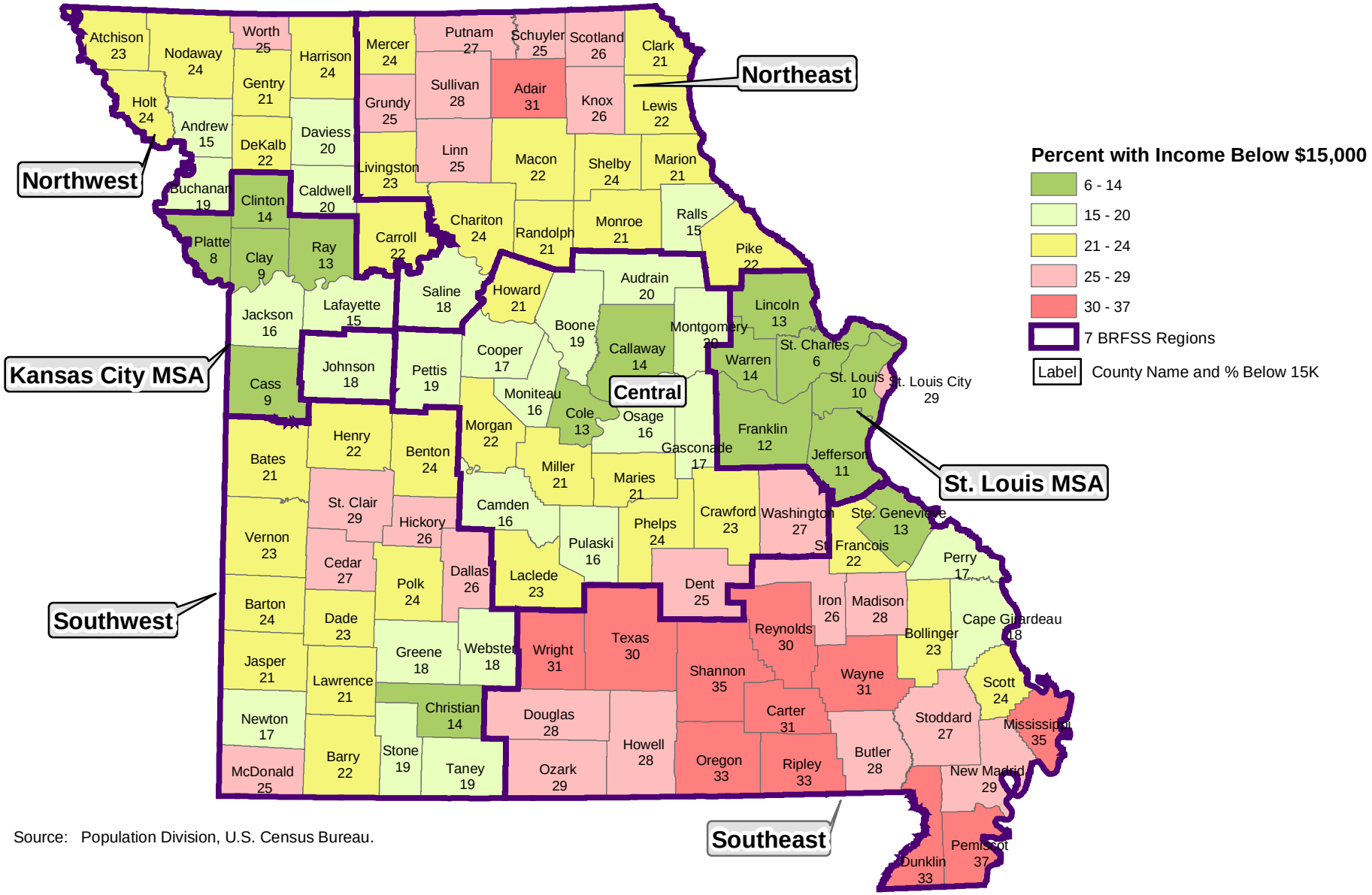
Source: Population Division, U.S. Census Bureau.

Percent of Missourians Not in Labor Force by Missouri Counties, 2000



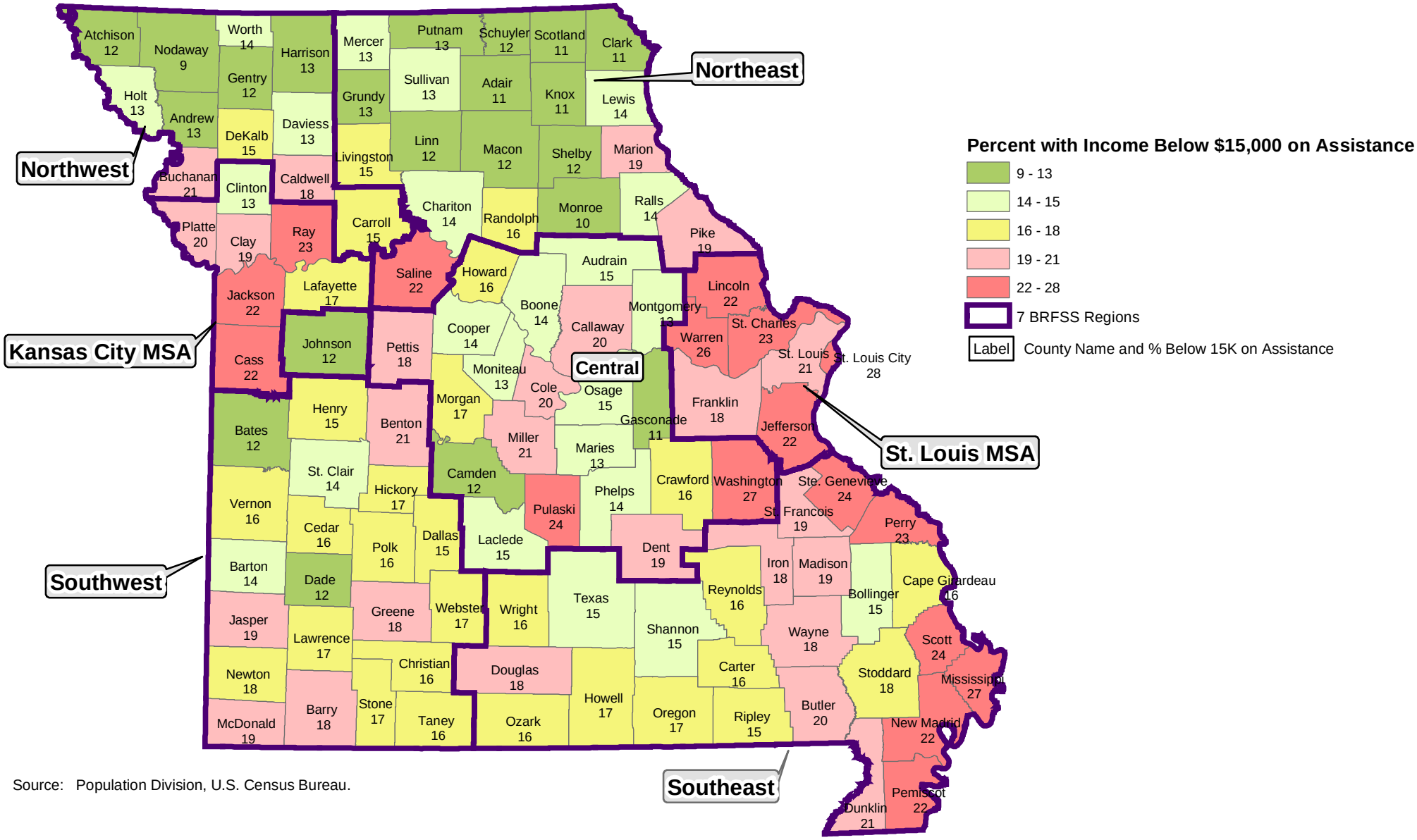
Source: Population Division, U.S. Census Bureau.

Percent of Missourians With Income Below $15,000 by Missouri Counties, 2000



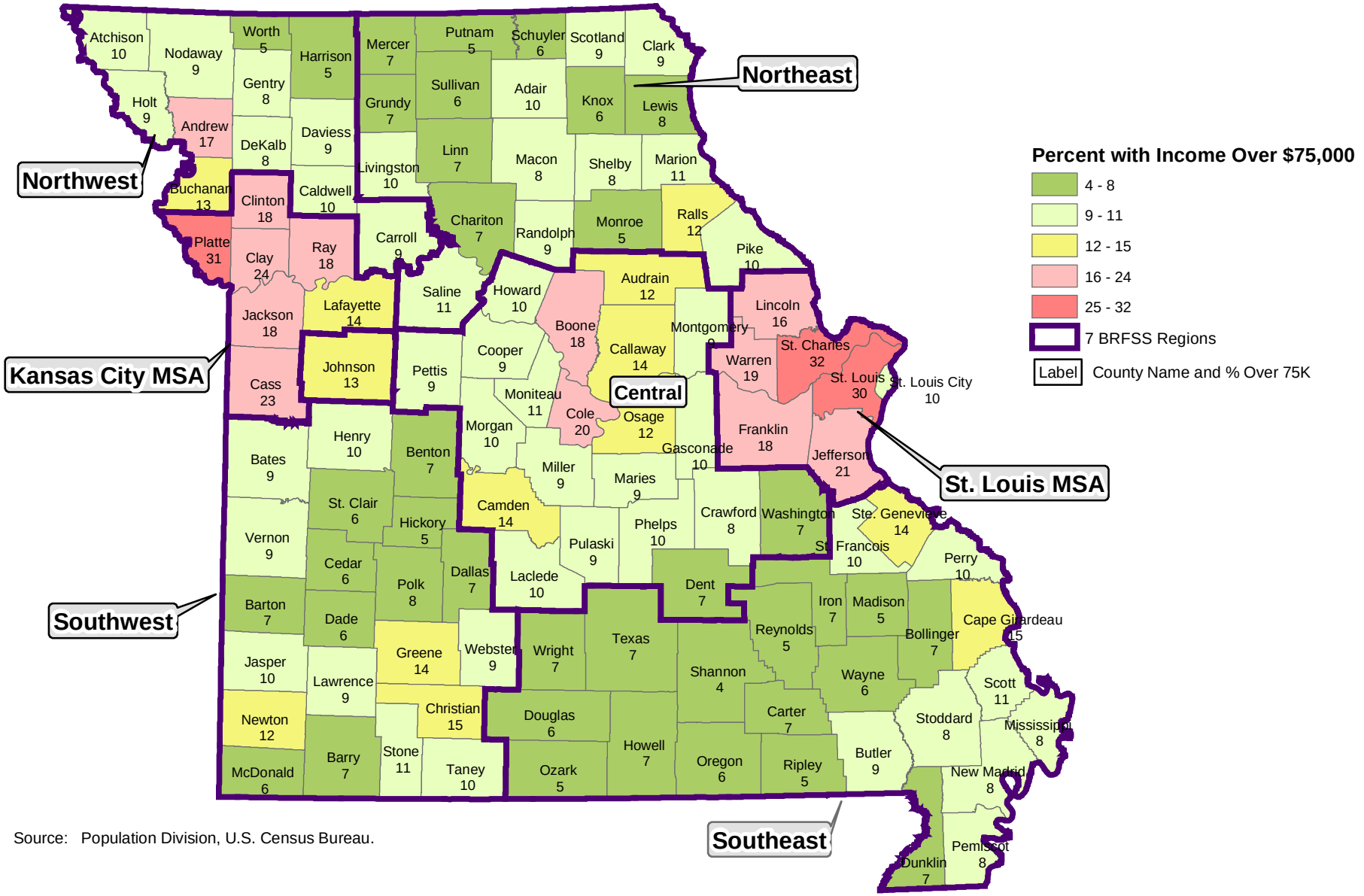
Source: Population Division, U.S. Census Bureau.

Percent of Missourians With Income Below $15,000 on Assistance by Missouri Counties, 2000



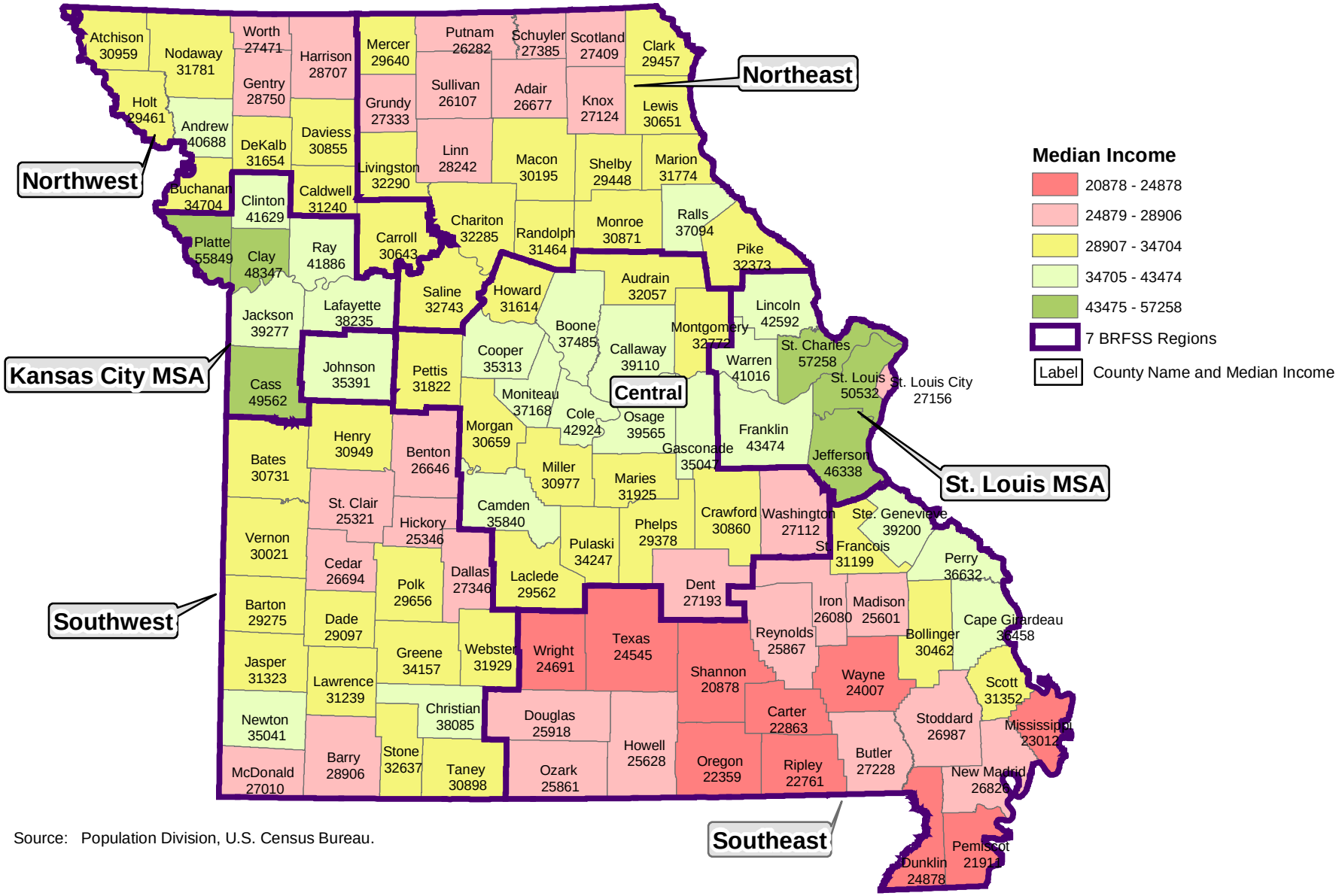
Source: Population Division, U.S. Census Bureau.

Percent of Missourians With Income Over $75,000 by Missouri Counties, 2000



Source: Population Division, U.S. Census Bureau.

Median Income of Missourians by Missouri Counties, 2000



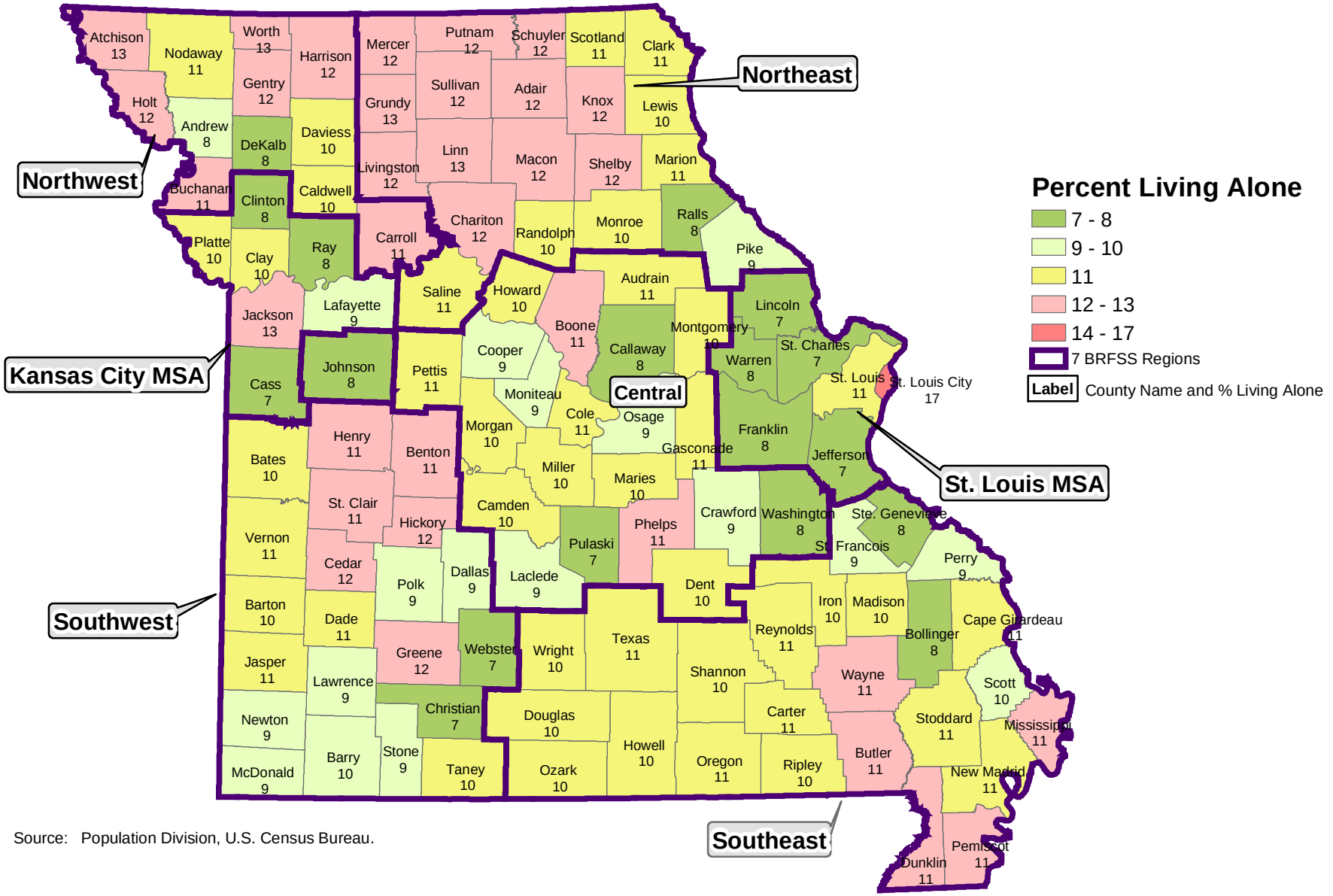
Source: Population Division, U.S. Census Bureau.

Appendix – 4(e)

GIS Maps:

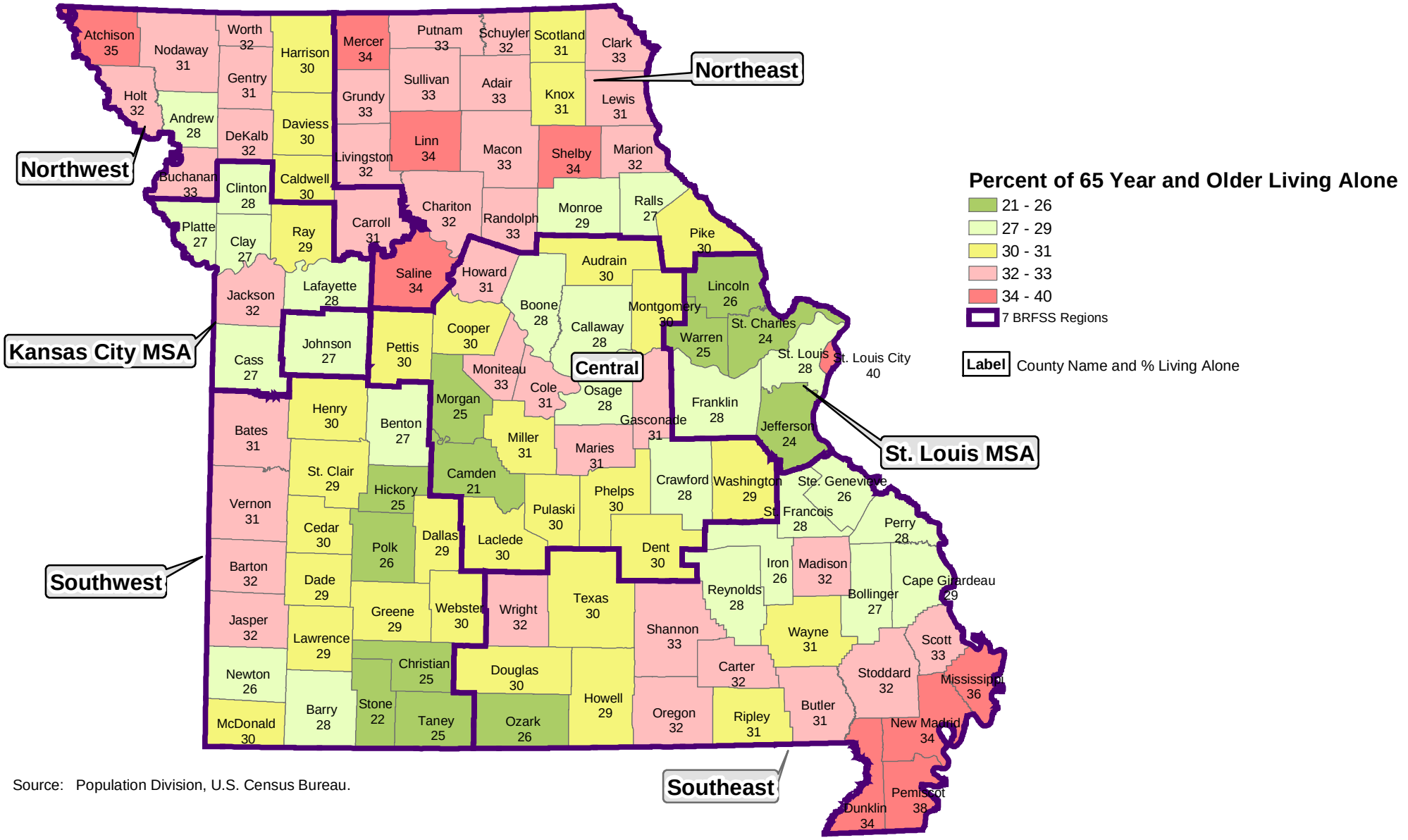
Living Arrangement and Housing in Missouri by Missouri Counties

Percent of Missourians Living Alone by Missouri Counties, 2000



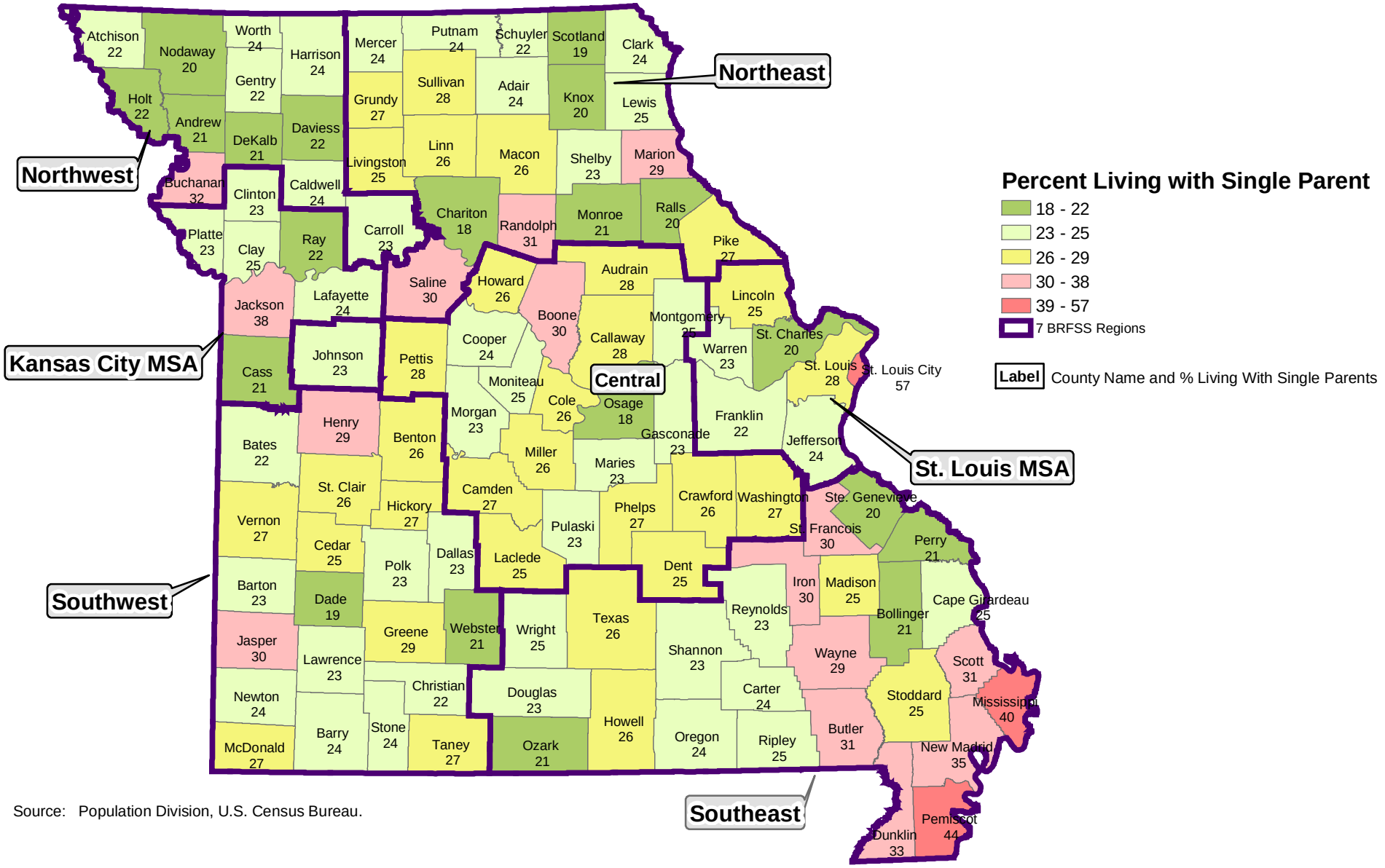
Source: Population Division, U.S. Census Bureau.

Percent of Missourians 65 Years and Older Living Alone by Missouri Counties, 2000



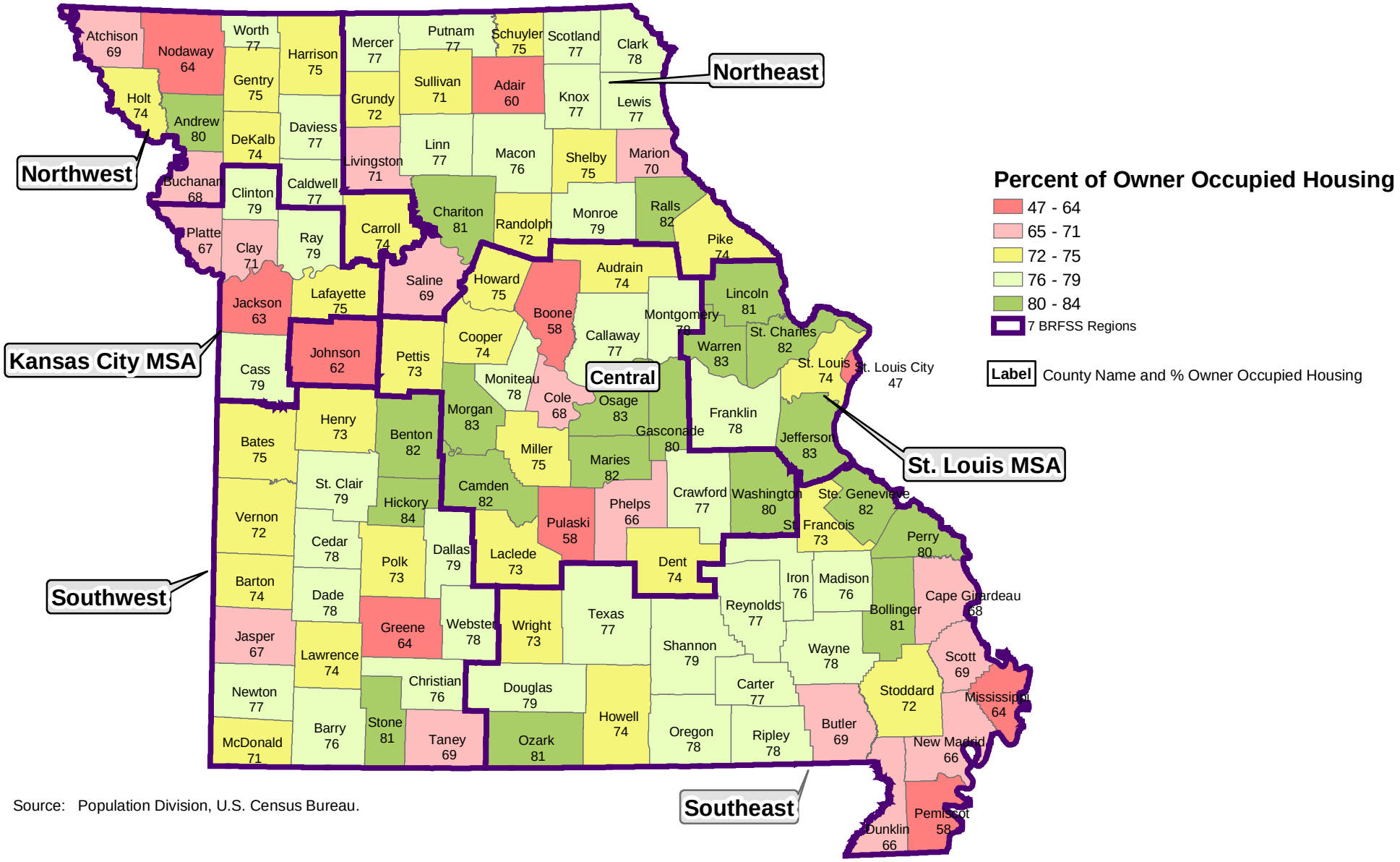
Source: Population Division, U.S. Census Bureau.

Percent of Missourians in Single Parent Living Arrangement by Missouri Counties, 2000



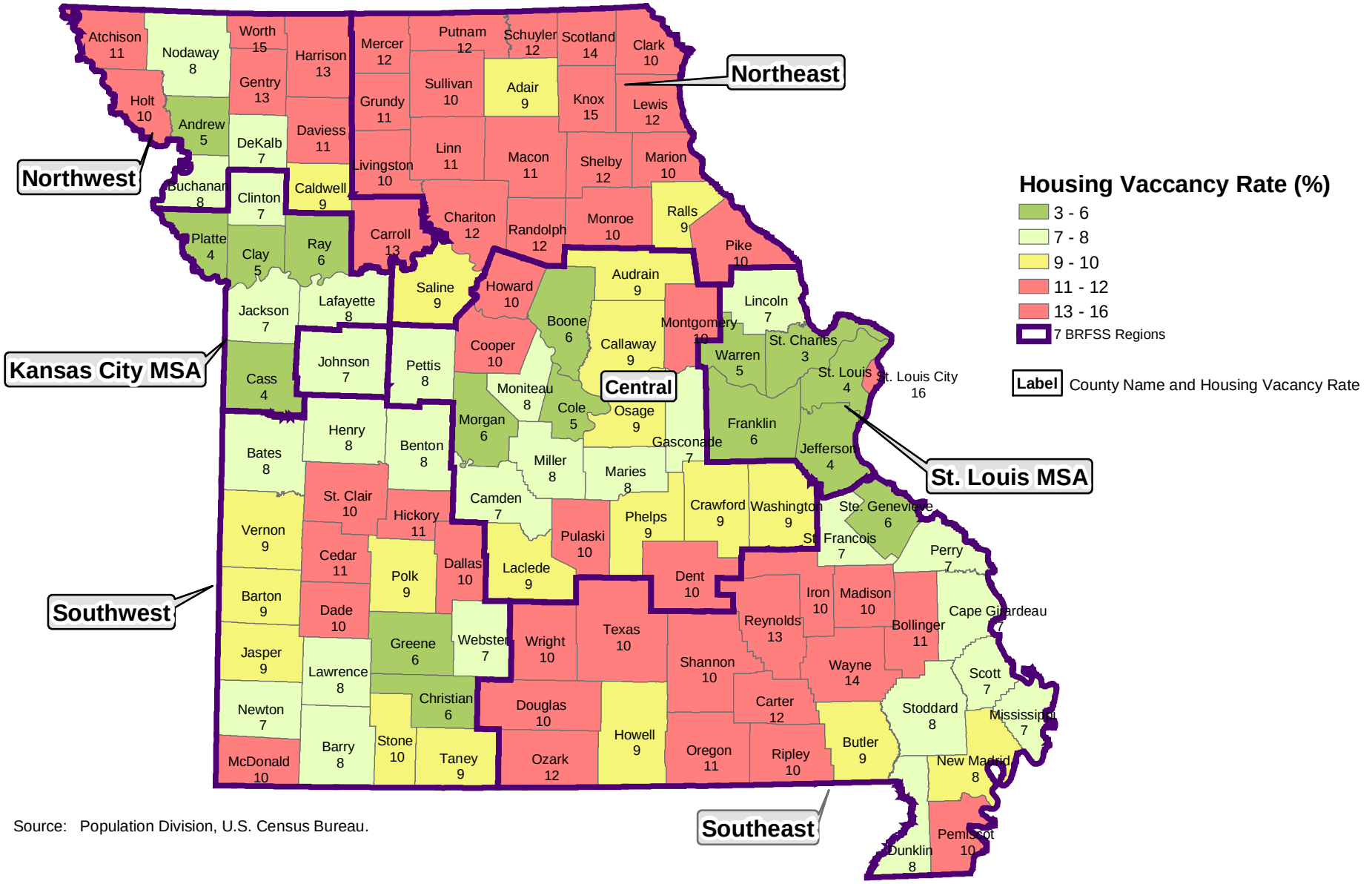
Source: Population Division, U.S. Census Bureau.

Percent Owner Occupied Housing by Missouri Counties, 2000



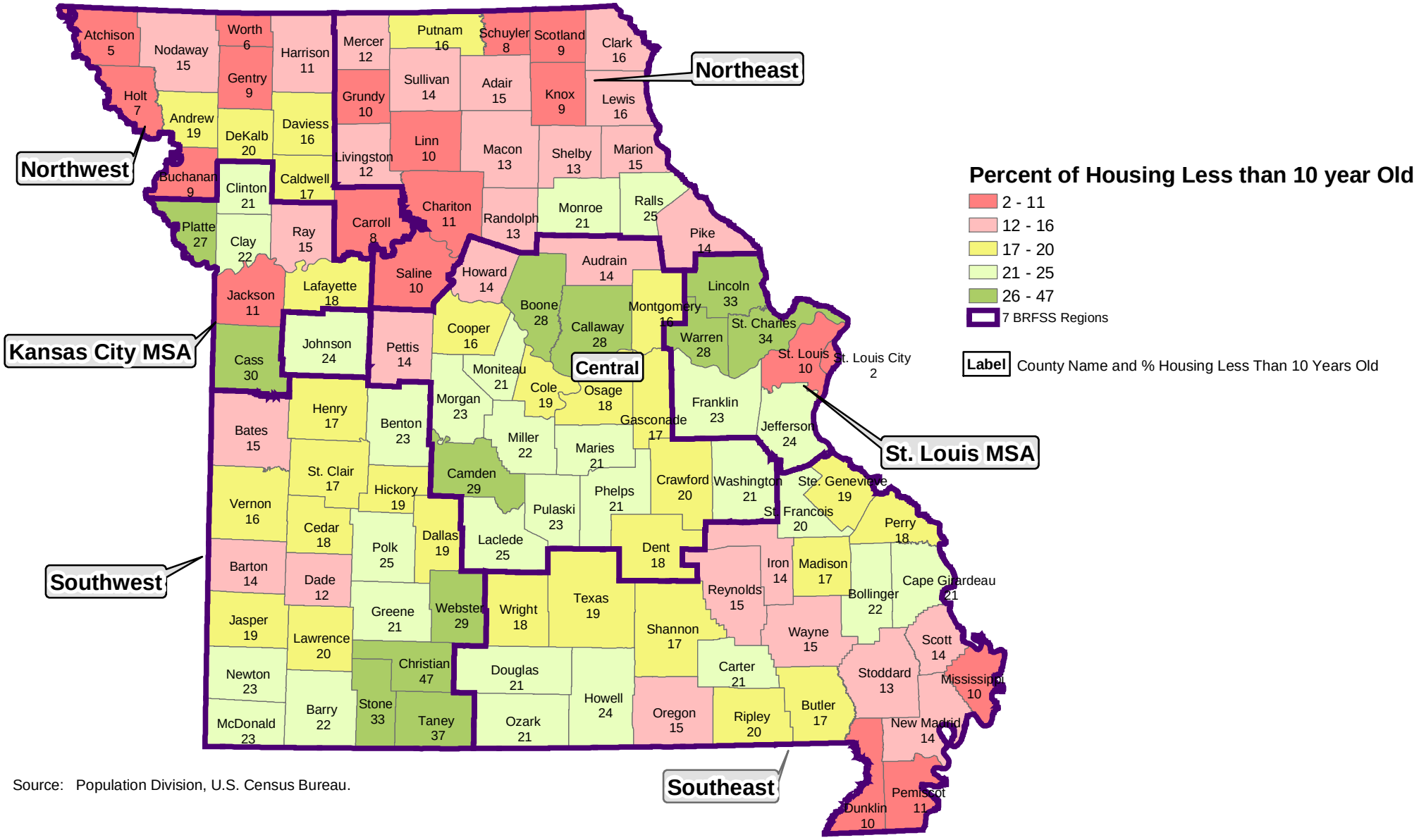
Source: Population Division, U.S. Census Bureau.

Housing Vacancy Rate (Percent) by Missouri Counties, 2000



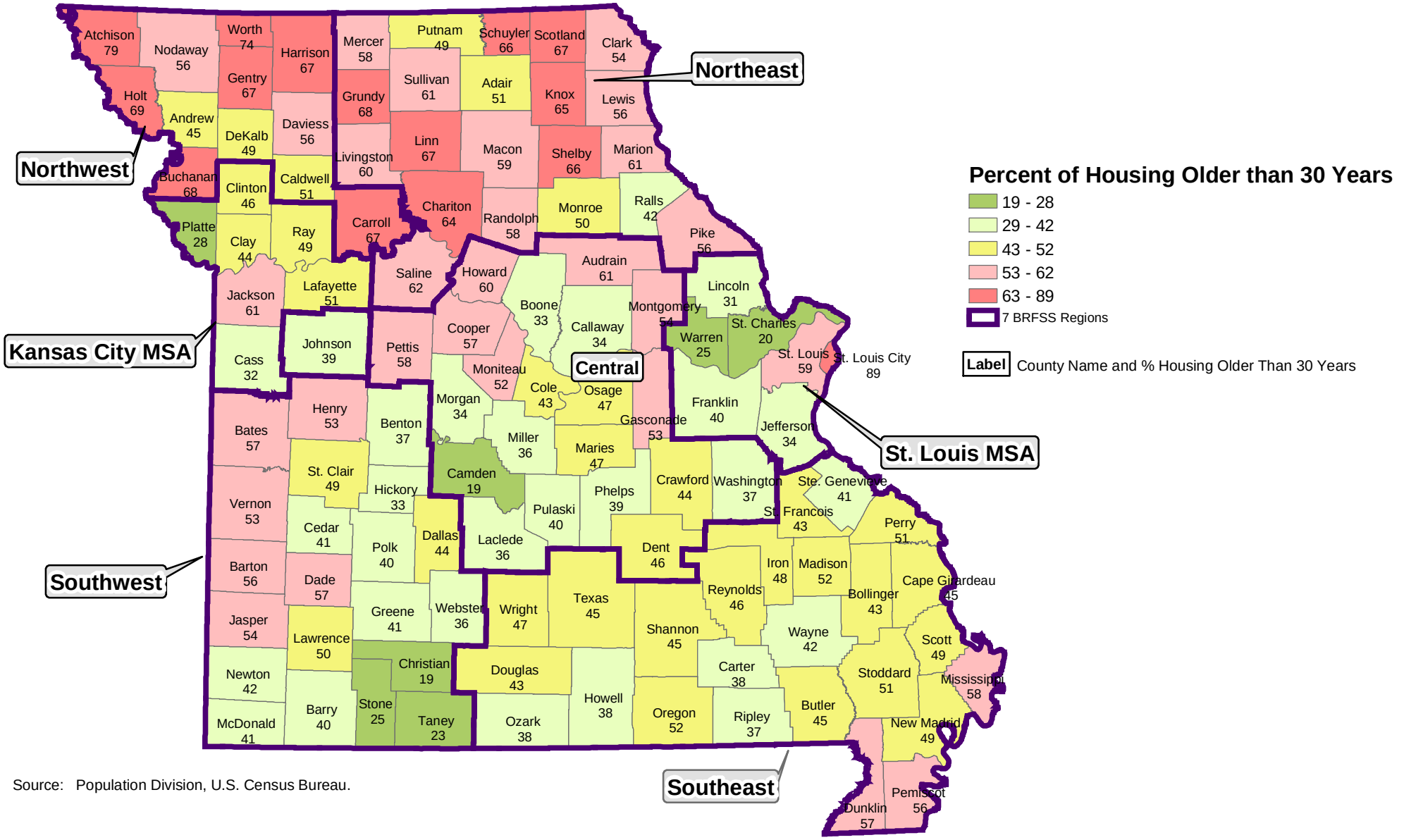
Source: Population Division, U.S. Census Bureau.

Percent of Housing Less than Ten Year Old by Missouri Counties, 2000



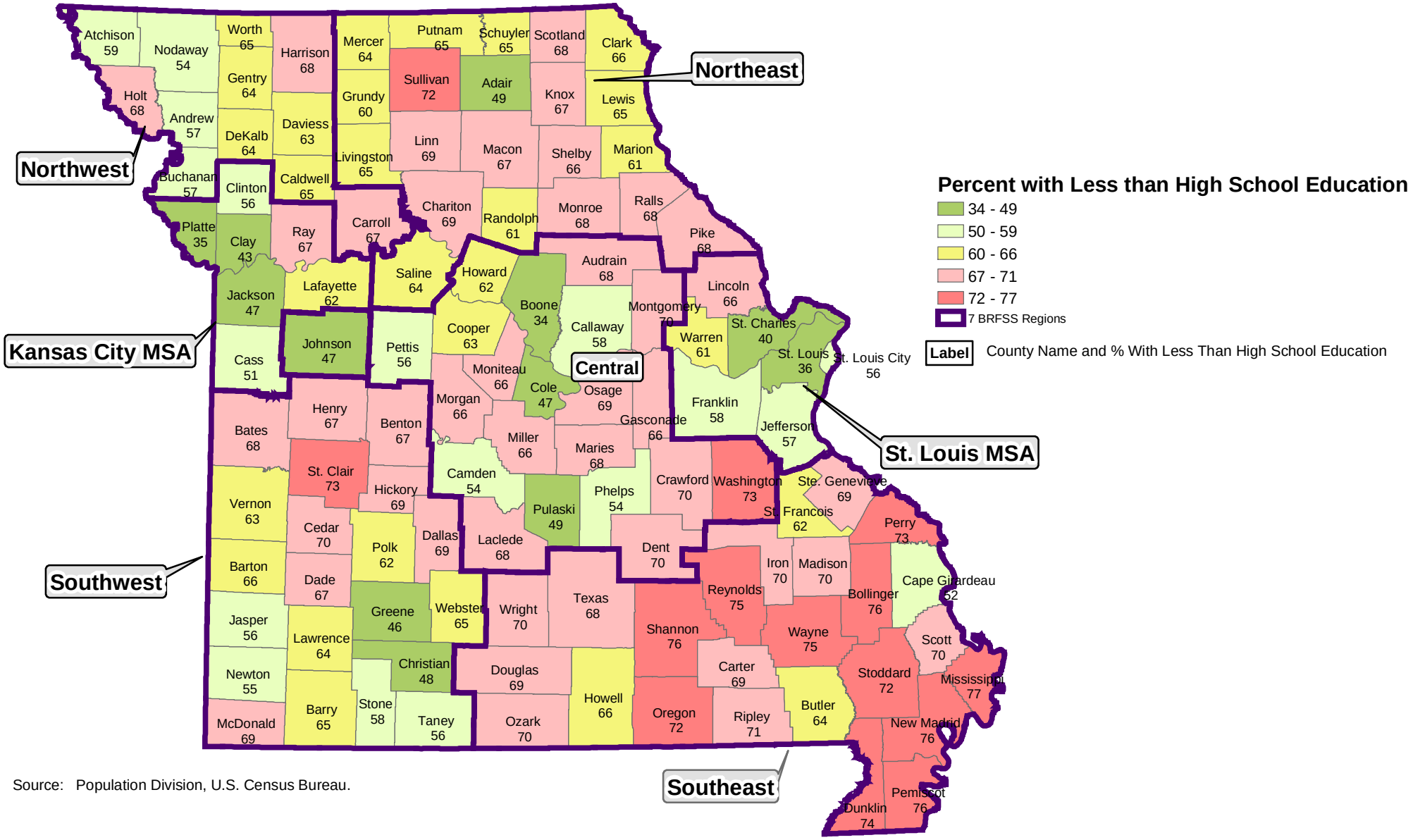
Source: Population Division, U.S. Census Bureau.

Percent of Housing Older Than 30 Years by Missouri Counties, 2000



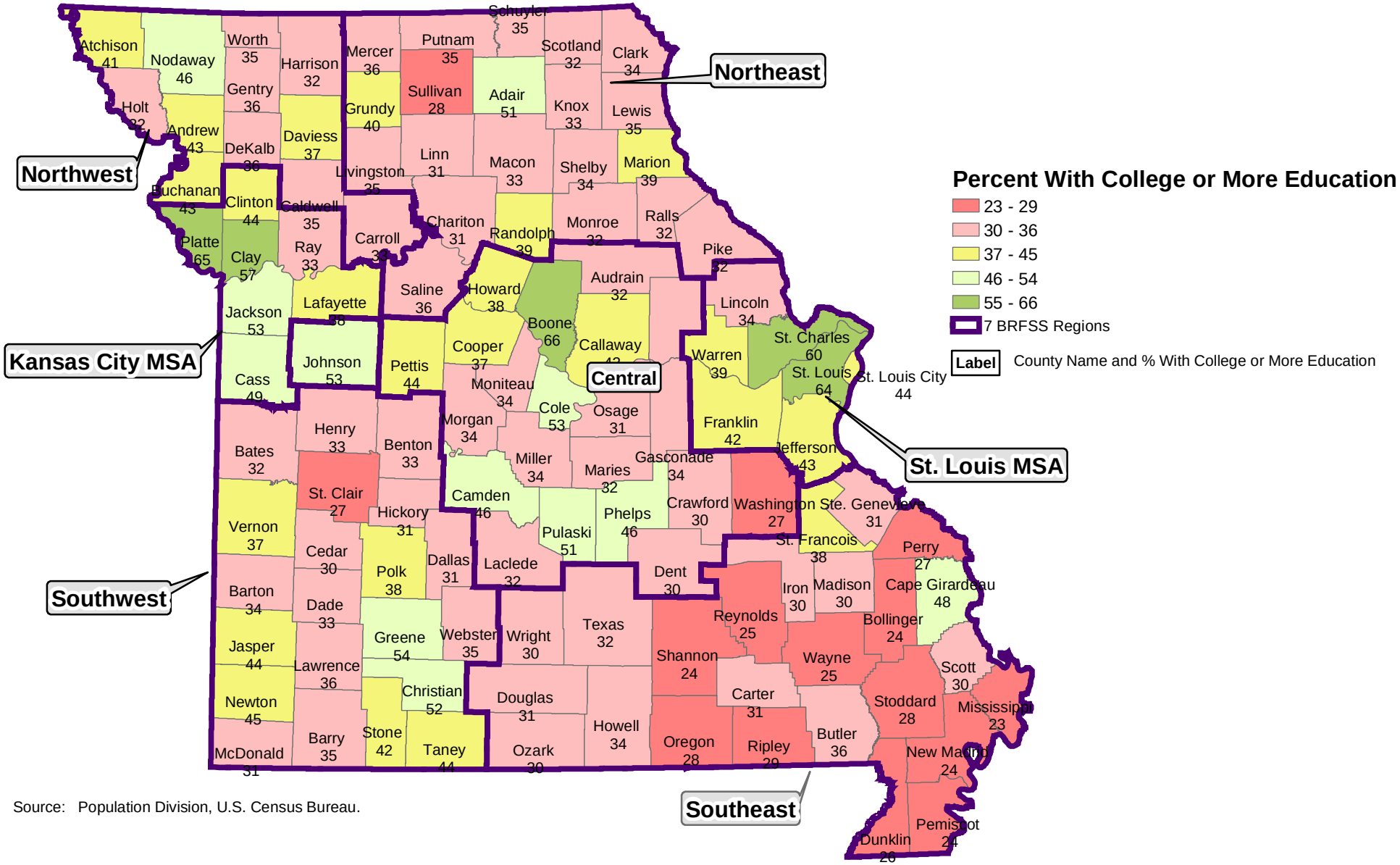
Source: Population Division, U.S. Census Bureau.

Percent of Missourians With Less Than High School Education by Missouri Counties, 2000



Source: Population Division, U.S. Census Bureau.

Percent of Missourians With College Or More Education by Missouri Counties, 2000



Source: Population Division, U.S. Census Bureau.

Appendix - 4(f)

Environment for Safety Net

(Ranking of Missouri Counties)

Note: All 115 counties of Missouri are ranked by most to least need of attention. Color-coding is based on quintile ranking.

Environment for Safety Net
(Counties By Composite and Individual Ranks)

	County Name	Population Density	% Non-White Races	% Speak English Less than Very Well	% Households Income Under $15,000	% Ages 16+ Not In Labor Force	% Ages 16+ Unemployed	% Single Parent Families	% With High School or Less Education	Composite Rank of Environment
1	Pemiscot	80	113	74	115	101	109	114	111	817
2	Dunklin	86	104	91	112	98	89	110	108	798
3	St. Louis City	115	115	112	101	65	115	115	21	759
4	Mississippi	60	111	6	113	86	110	113	115	714
5	Butler	89	91	77	95	95	96	106	42	691
6	Washington	59	76	39	94	106	105	91	106	676
7	New Madrid	46	109	13	103	88	82	111	114	666
8	Pike	64	105	102	59	97	56	90	79	652
9	St. Francois	103	106	19	70	38	91	107	95	629
10	Ripley	49	44	43	110	109	108	59	101	623
11	McDonald	68	101	114	83	39	32	86	91	614
12	Sullivan	6	78	115	98	50	67	92	104	610
13	Hickory	39	32	52	89	115	107	84	86	604
14	Wayne	25	26	12	109	113	111	98	110	604
15	Phelps	84	86	89	79	69	93	87	15	602
16	Oregon	24	81	18	111	111	103	49	103	600
17	Howell	69	60	65	99	79	92	74	56	594
18	Ste. Genevieve	36	77	9	114	105	98	42	112	593
19	Texas	45	59	29	104	100	94	81	81	593
20	Iron	30	52	20	90	103	97	103	97	592
21	Audrain	76	97	99	39	78	28	96	77	590
22	Jasper	104	89	101	44	28	95	102	20	583
23	Jackson	113	114	110	23	20	77	112	8	577
24	Stoddard	71	40	34	91	80	84	72	102	574
25	Cedar	43	55	70	93	108	35	70	96	570
26	Randolph	77	98	79	46	83	43	108	33	567
27	Buchanan	108	88	67	37	52	81	109	24	566
28	Wright	52	30	54	107	87	78	65	93	566
29	Shannon	27	64	62	58	99	104	104	37	555
30	Reynolds	2	73	3	105	110	114	36	109	552
31	Barry	67	82	107	61	73	53	53	54	550
32	Dent	17	45	49	82	92	102	69	92	548
33	Marion	93	84	48	49	40	99	100	34	547
34	Madison	40	16	31	96	91	101	66	100	541
35	Carter	3	54	22	108	107	106	56	84	540
36	Dallas	54	35	100	87	85	61	32	85	539
37	St. Clair	19	38	4	100	102	90	78	105	536
38	Boone	107	108	103	33	5	72	101	1	530
39	Pettis	88	93	106	34	31	66	93	19	530
40	Saline	57	100	109	28	36	40	105	47	522
41	Crawford	61	17	40	68	81	83	75	94	519
42	Benton	47	22	25	75	112	87	80	68	516

Environment for Safety Net
(Counties By Composite and Individual Ranks)

	County Name	Population Density	% Non-White Races	% Speak English Less than Very Well	% Households Income Under $15,000	% Ages 16+ Not In Labor Force	% Ages 16+ Unemployed	% Single Parent Families	% With High School or Less Education	Composite Rank of Environment
43	Morgan	65	39	111	54	89	57	39	59	513
44	Taney	90	61	78	36	22	113	88	22	510
45	Douglas	28	51	71	97	93	50	29	90	509
46	Henry	58	53	47	56	64	65	99	67	509
47	Grundy	44	29	94	84	72	59	89	31	502
48	Adair	72	71	84	106	55	54	44	12	498
49	Montgomery	31	67	66	38	49	86	61	99	497
50	DeKalb	53	102	86	55	114	23	16	46	495
51	Greene	110	83	73	31	21	74	97	6	495
52	St. Louis Co	114	112	97	5	17	45	95	3	488
53	Laclede	75	46	50	64	43	52	71	80	481
54	Lawrence	95	72	98	48	44	38	40	45	480
55	Stone	96	28	37	35	94	112	45	29	476
56	Pulaski	94	110	105	19	3	100	30	11	472
57	Moniteau	62	87	108	20	61	5	64	62	469
58	Polk	79	43	83	71	71	48	31	36	462
59	Miller	74	20	63	52	37	73	77	61	457
60	Ozark	12	31	17	102	104	79	14	98	457
61	Cooper	63	103	64	26	84	14	54	41	449
62	Johnson	91	99	95	29	9	85	33	7	448
63	Howard	38	96	53	42	32	69	76	35	441
64	Lewis	34	68	90	57	24	55	62	51	441
65	Linn	41	21	45	81	67	15	82	88	440
66	Vernon	50	48	56	65	57	36	83	40	435
67	Macon	33	63	72	53	45	25	73	70	434
68	Cole	105	107	87	10	15	19	79	9	431
69	Cape Girardeau	102	92	51	30	14	64	60	14	427
70	Callaway	83	94	59	13	29	26	94	28	426
71	Newton	97	85	80	27	30	42	46	18	425
72	Webster	78	62	104	32	51	27	15	50	419
73	Livingston	55	69	15	67	75	11	68	52	412
74	Monroe	22	80	85	50	47	39	10	78	411
75	Camden	87	27	35	21	90	46	85	17	408
76	Carroll	23	49	76	60	63	31	35	71	408
77	Bollinger	35	25	2	66	59	88	12	113	400
78	Nodaway	48	56	93	69	33	76	8	16	399
79	Bates	37	41	46	43	62	63	22	82	396
80	Lincoln	92	65	26	9	10	60	67	64	393
81	Putnam	10	1	32	92	96	47	58	49	385
82	Clay	111	90	92	3	4	13	63	5	381
83	Ray	66	58	55	8	23	75	20	65	370
84	Clark	20	3	82	47	41	71	48	57	369

Environment for Safety Net
(Counties By Composite and Individual Ranks)

	County Name	Population Density	% Non-White Races	% Speak English Less than Very Well	% Households Income Under $15,000	% Ages 16+ Not In Labor Force	% Ages 16+ Unemployed	% Single Parent Families	% With High School or Less Education	Composite Rank of Environment
85	Lafayette	81	75	44	16	26	20	57	38	357
86	Barton	42	50	61	77	35	6	27	58	356
87	Chariton	7	66	24	72	74	29	1	83	356
88	Harrison	13	15	57	76	46	21	50	74	352
89	Worth	5	2	8	80	68	80	52	55	350
90	Dade	18	36	11	62	82	68	3	69	349
91	Warren	85	70	58	12	13	33	43	32	346
92	Perry	73	18	88	25	18	4	11	107	344
93	Gasconade	56	6	69	24	58	30	38	60	341
94	Platte	106	95	96	2	1	2	34	2	338
95	Jefferson	109	33	60	6	7	41	55	26	337
96	Scotland	9	4	81	88	27	44	4	75	332
97	Shelby	14	24	33	73	42	51	28	63	328
98	Daviess	15	7	113	41	54	34	18	39	321
99	Knox	4	11	21	86	76	49	6	66	319
100	Clinton	82	57	42	15	25	37	37	23	318
101	Maries	29	37	27	45	48	17	41	73	317
102	Gentry	16	9	23	51	77	70	24	43	313
103	Scott	98	19	38	11	34	12	9	89	310
104	Schuyler	21	13	1	85	53	58	25	53	309
105	St. Charles	112	79	75	1	2	22	5	4	300
106	Cass	101	74	68	4	8	9	17	13	294
107	Holt	8	12	28	74	70	1	19	72	284
108	Mercer	1	5	14	78	66	24	47	44	279
109	Franklin	99	34	41	7	16	16	23	27	263
110	Atchison	11	47	5	63	60	18	21	30	255
111	Caldwell	32	10	7	40	56	8	51	48	252
112	Ralls	26	23	16	18	11	62	7	76	239
113	Christian	100	42	30	14	6	10	26	10	238
114	Osage	51	8	36	22	12	3	2	87	221
115	Andrew	70	14	10	17	19	7	13	25	175

Source: Computation of these ranks is based on data from Census 2000

Note: 1- Missouri counties, with individual and composite ranking, by environment with greater potential for health care safety net need

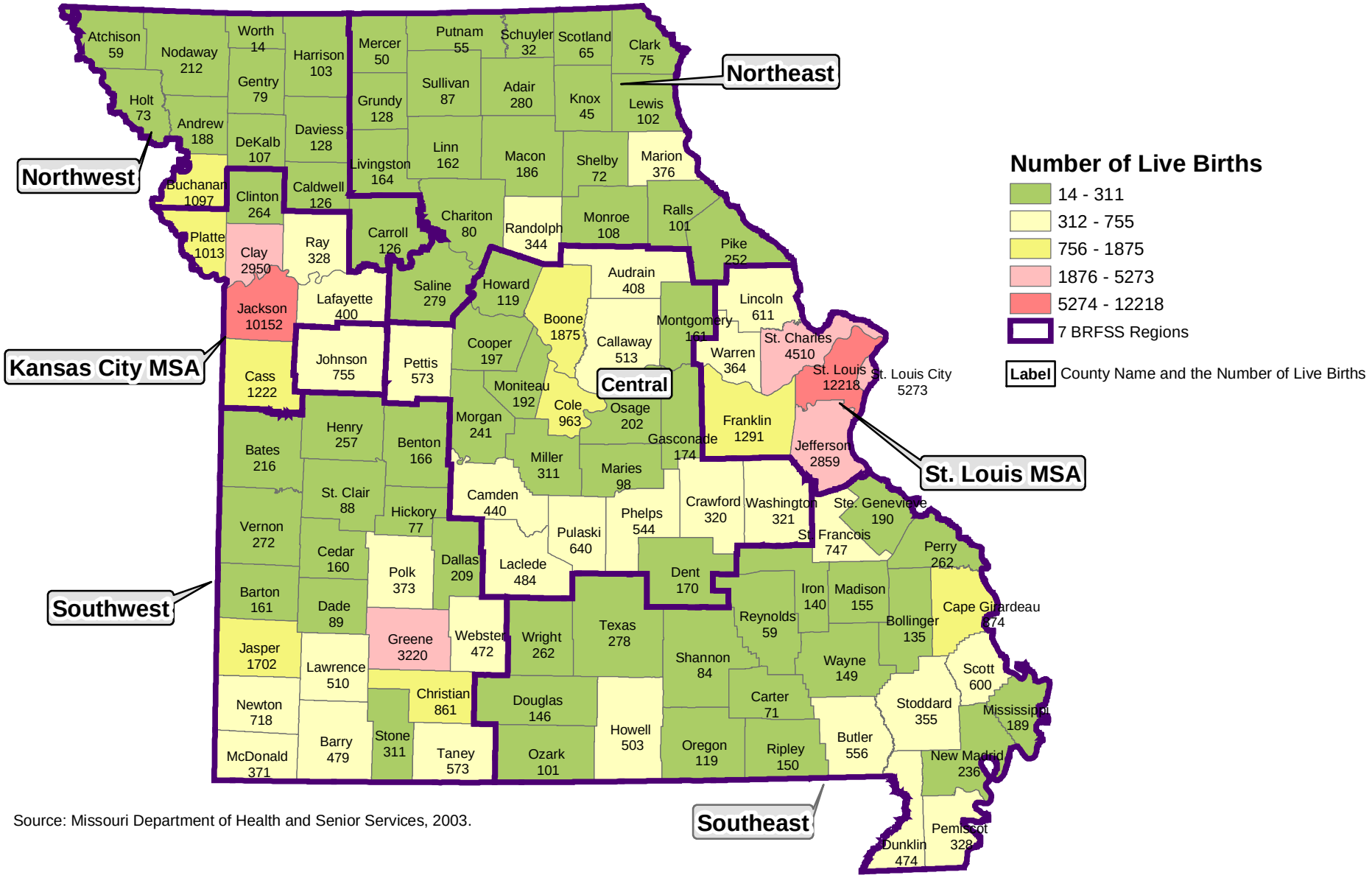
2- Color-coding shows the quintile grouping

Appendix – 5(a)

GIS Maps:

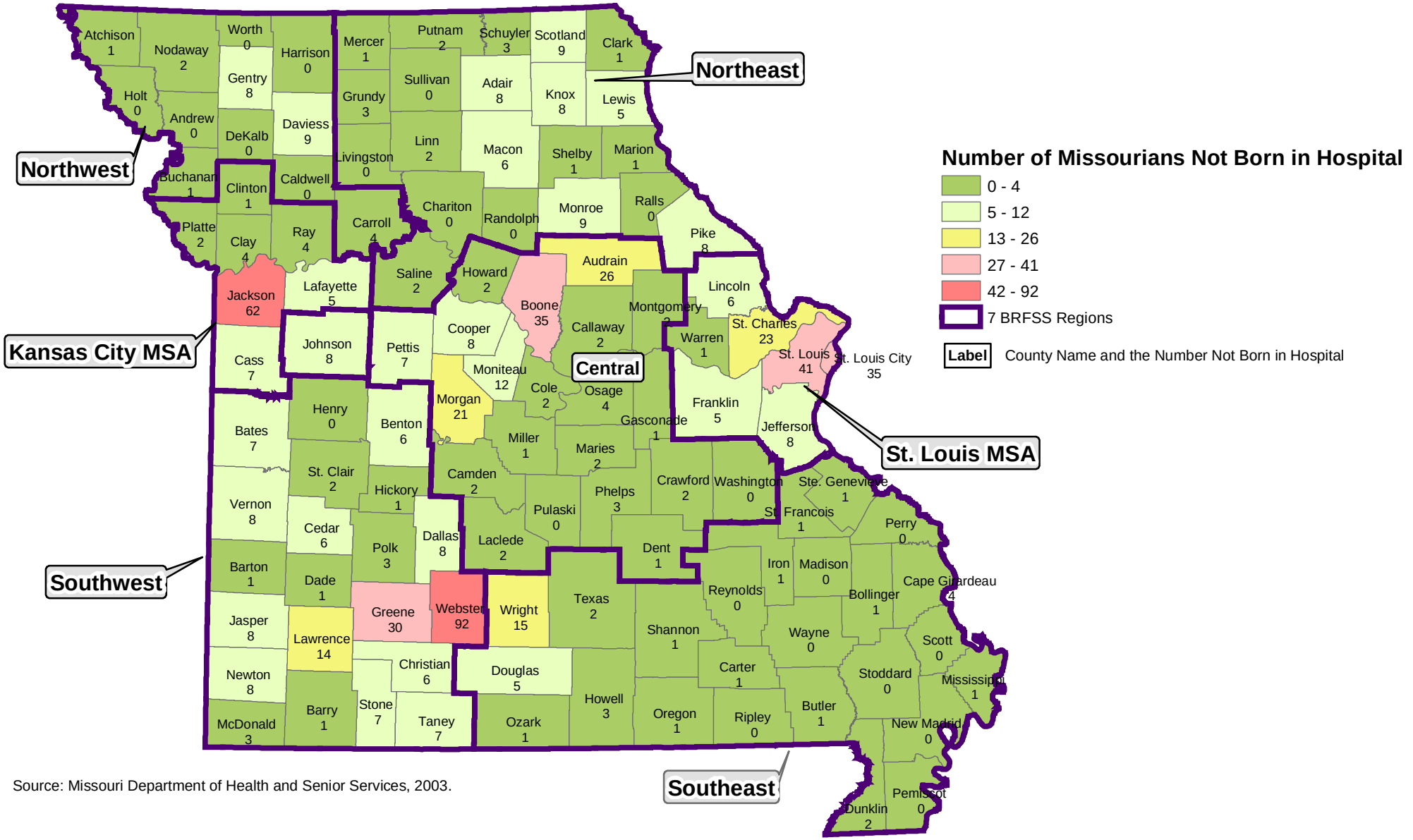
Birth Statistics
(Important Indicators)
by Missouri Counties

Number of Live Births
by Missouri Counties, 2003



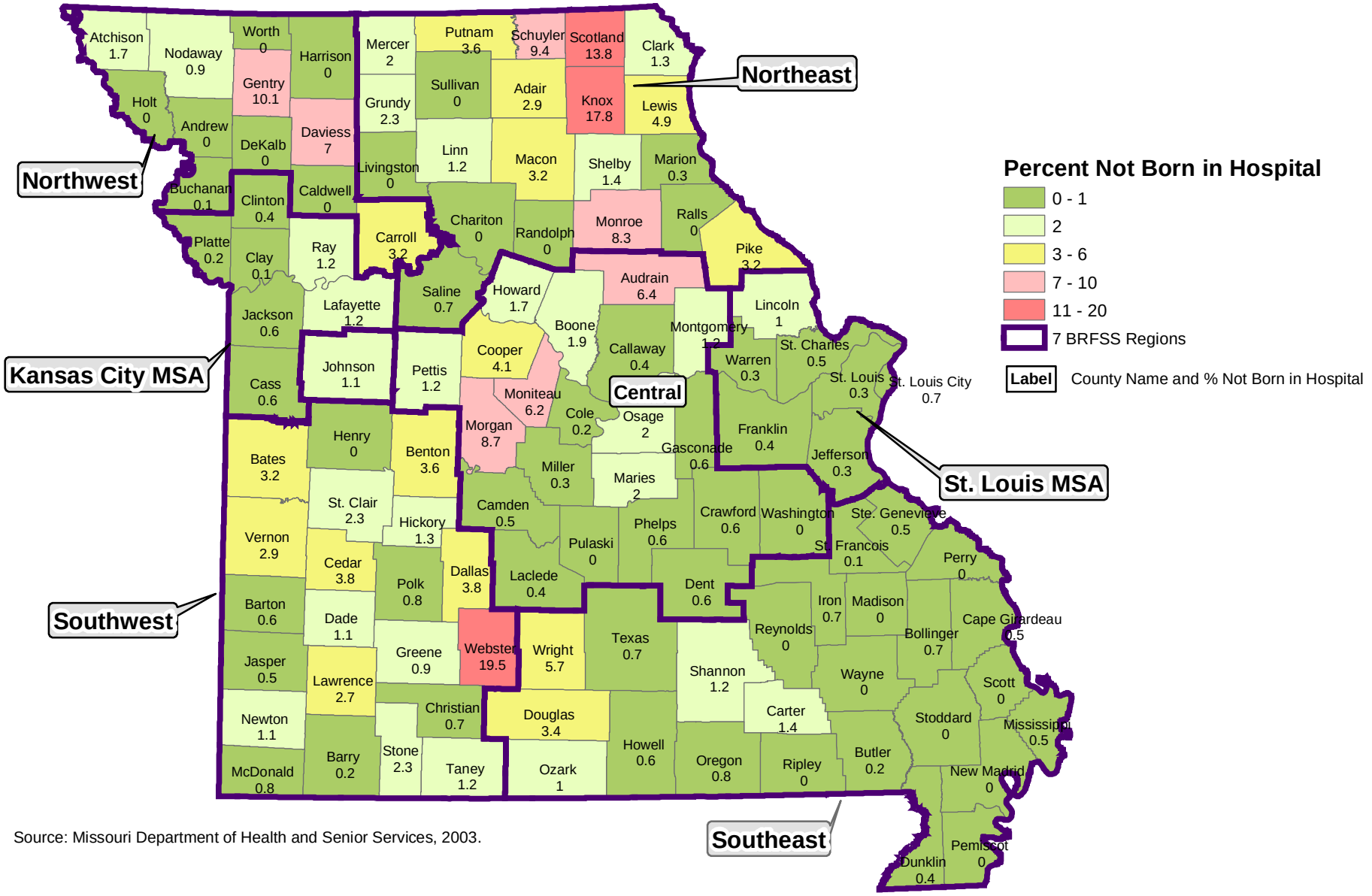
Source: Missouri Department of Health and Senior Services, 2003.

Number of Missourians Not Born in Hospital by Missouri Counties, 2003



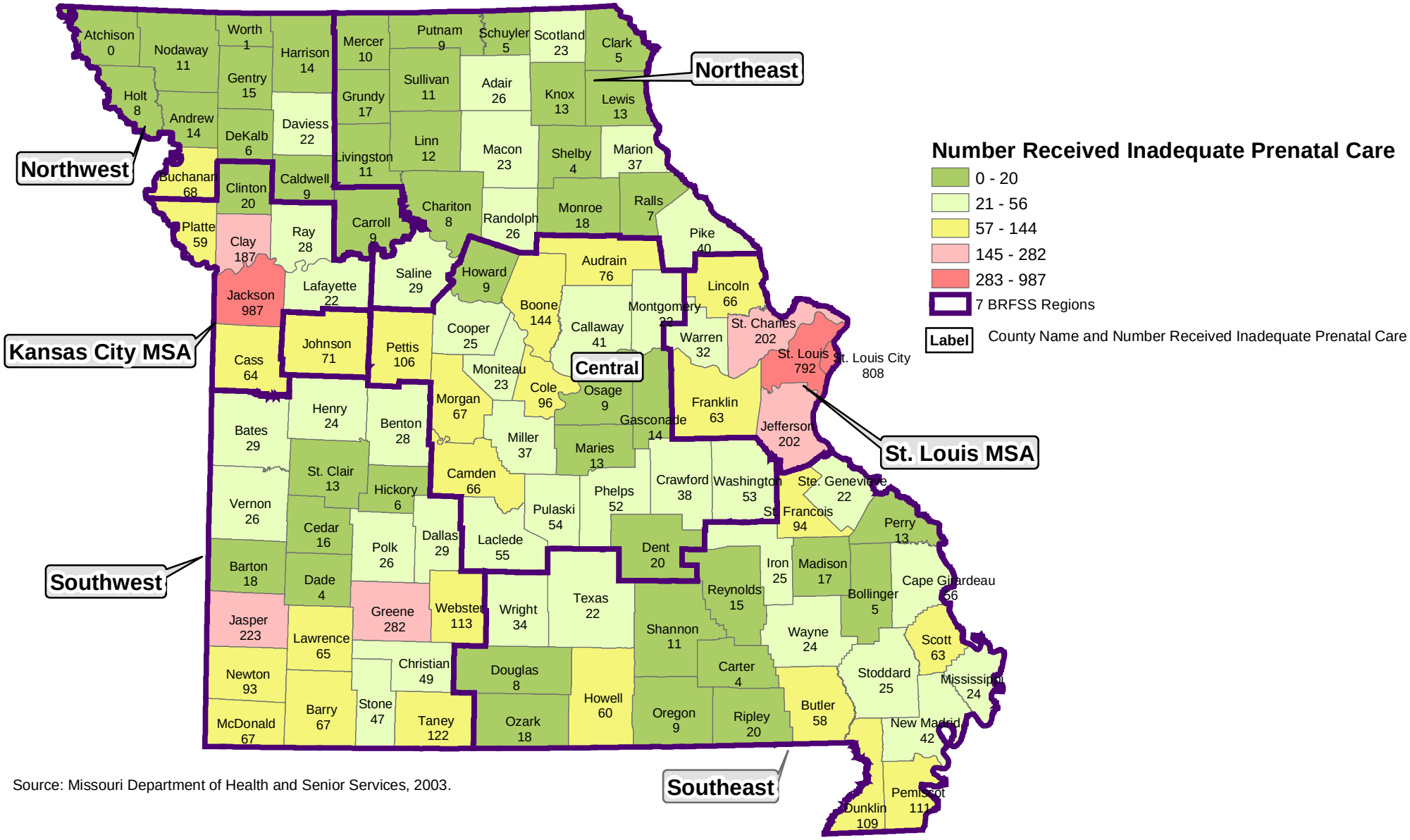
Source: Missouri Department of Health and Senior Services, 2003.

Missourians Not Born in Hospital: Rate per 100 Live Births by Missouri Counties, 2003



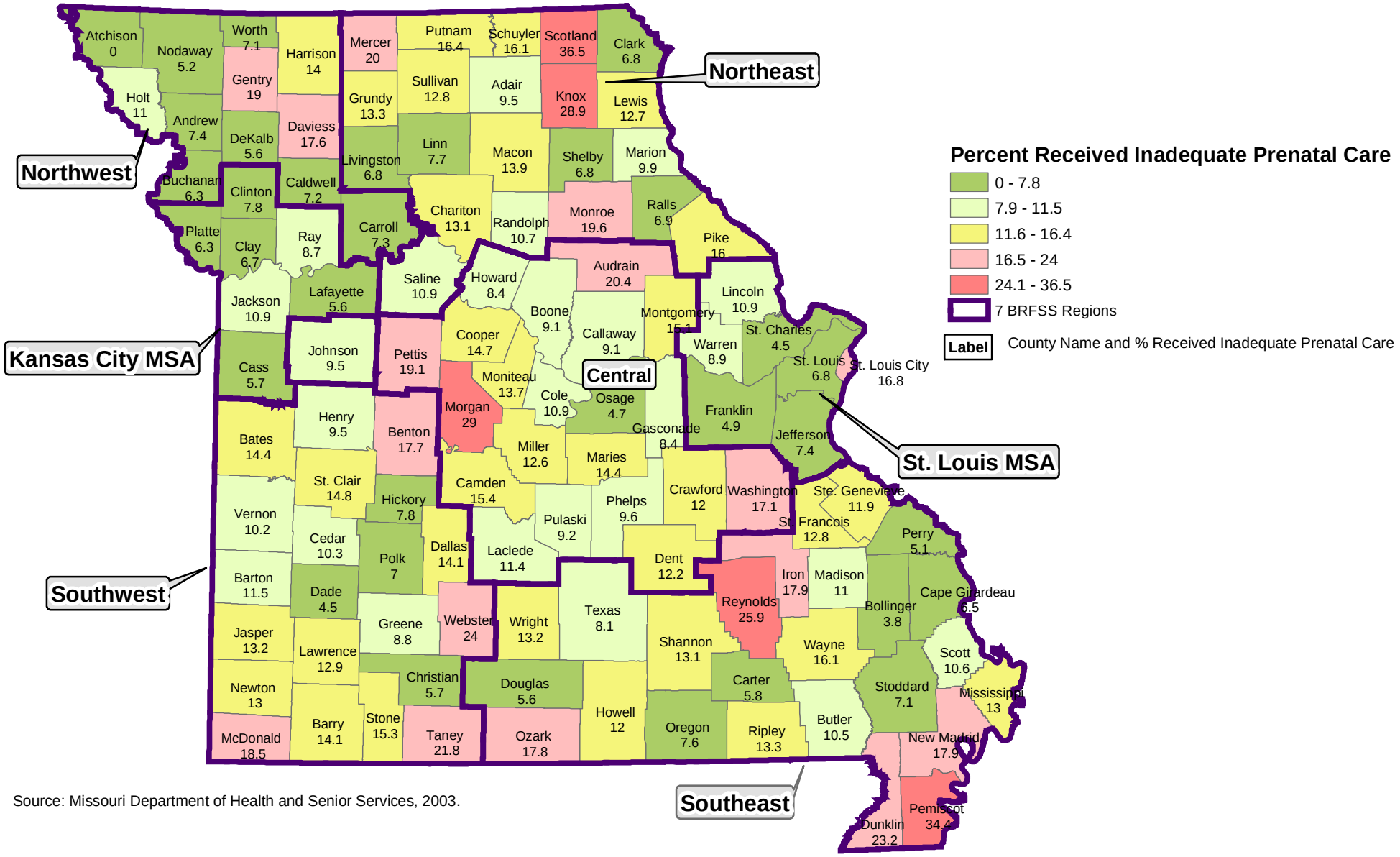
Source: Missouri Department of Health and Senior Services, 2003.

Number of Missourians Who Received Inadequate Prenatal Care by Missouri Counties, 2003



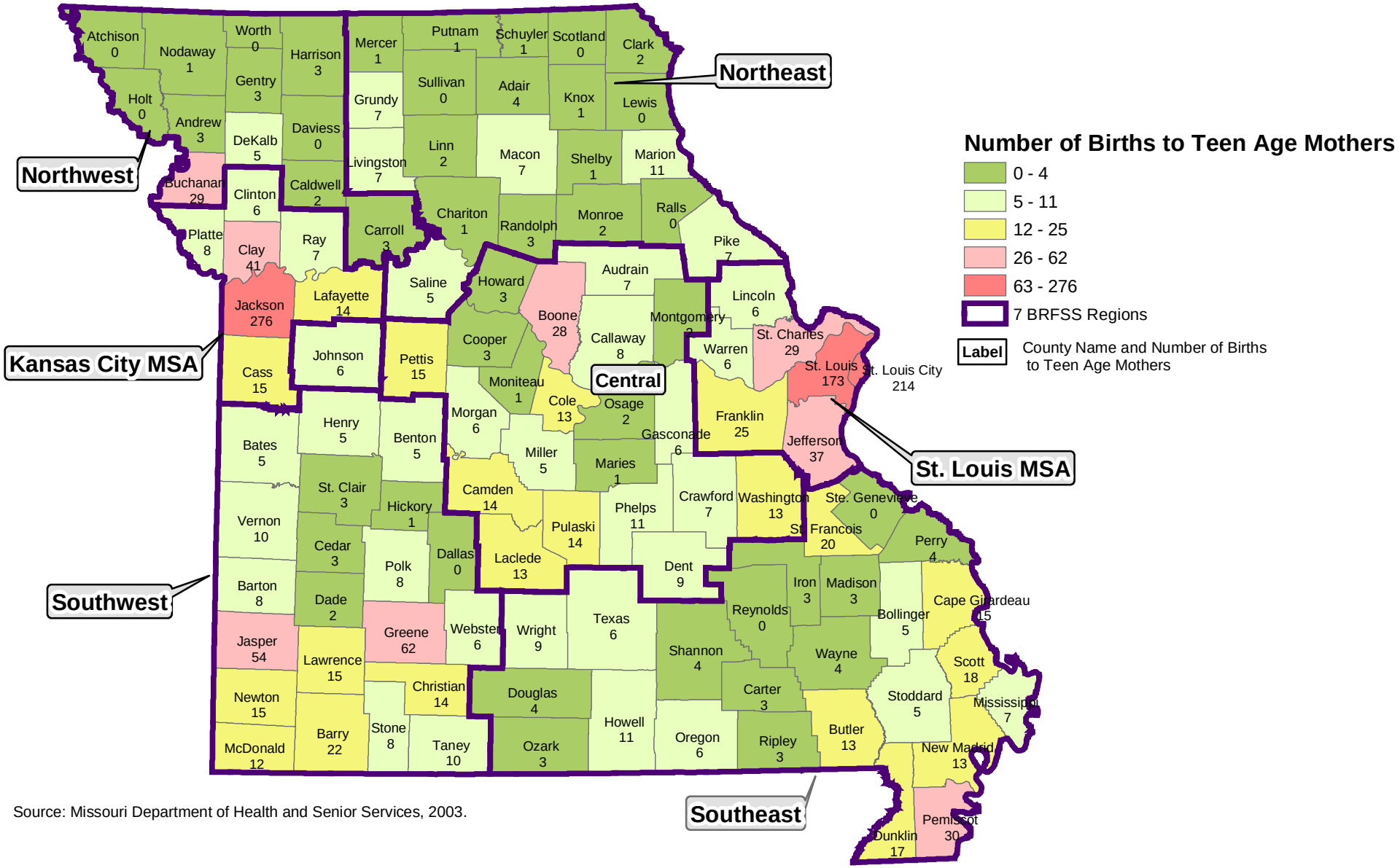
Source: Missouri Department of Health and Senior Services, 2003.

Missourians Who Received Inadequate Prenatal Care: Rate per 100 Live Births by Missouri Counties, 2003



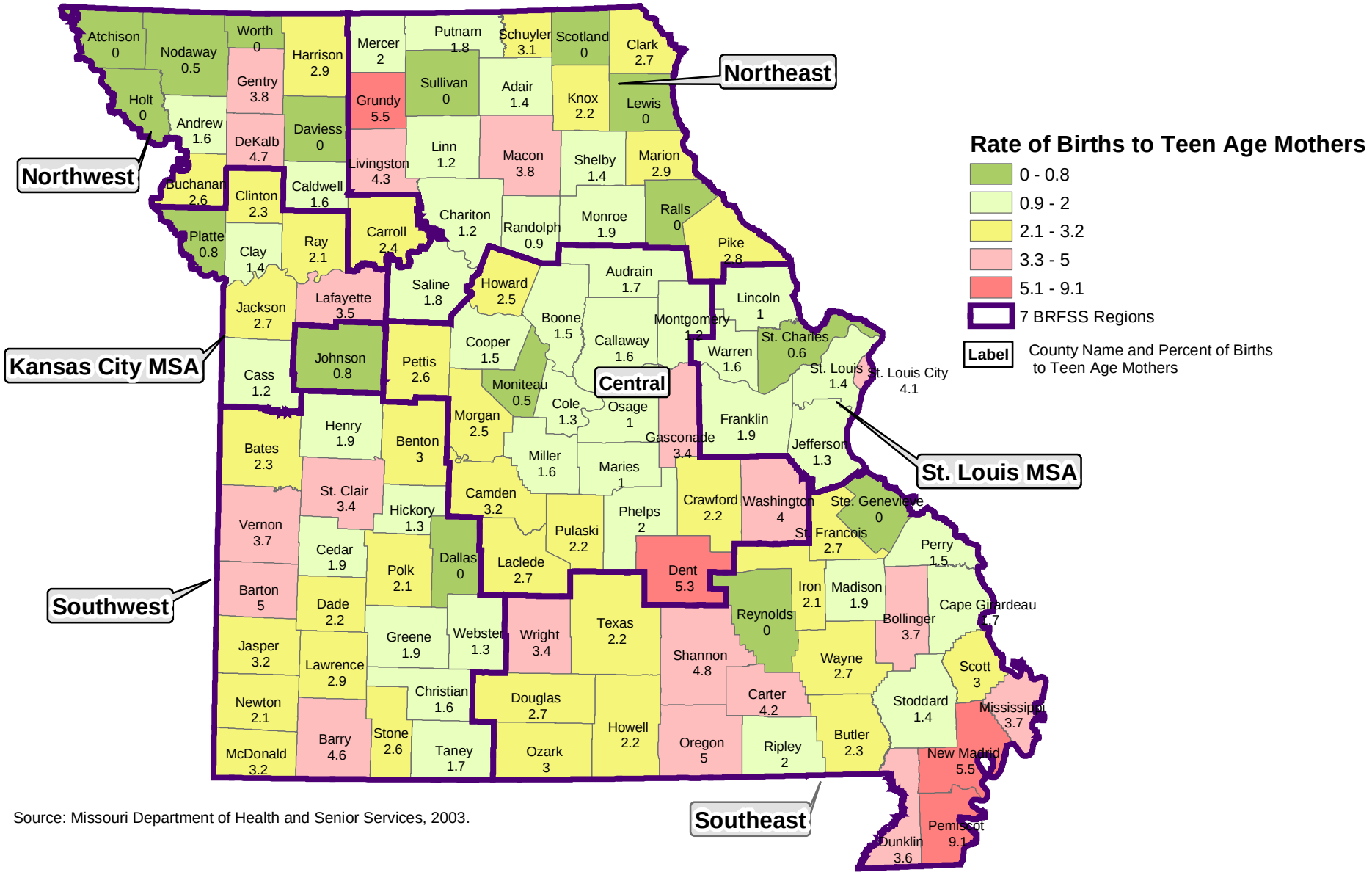
Source: Missouri Department of Health and Senior Services, 2003.

Number of Births to Teen Age Mothers by Missouri Counties, 2003



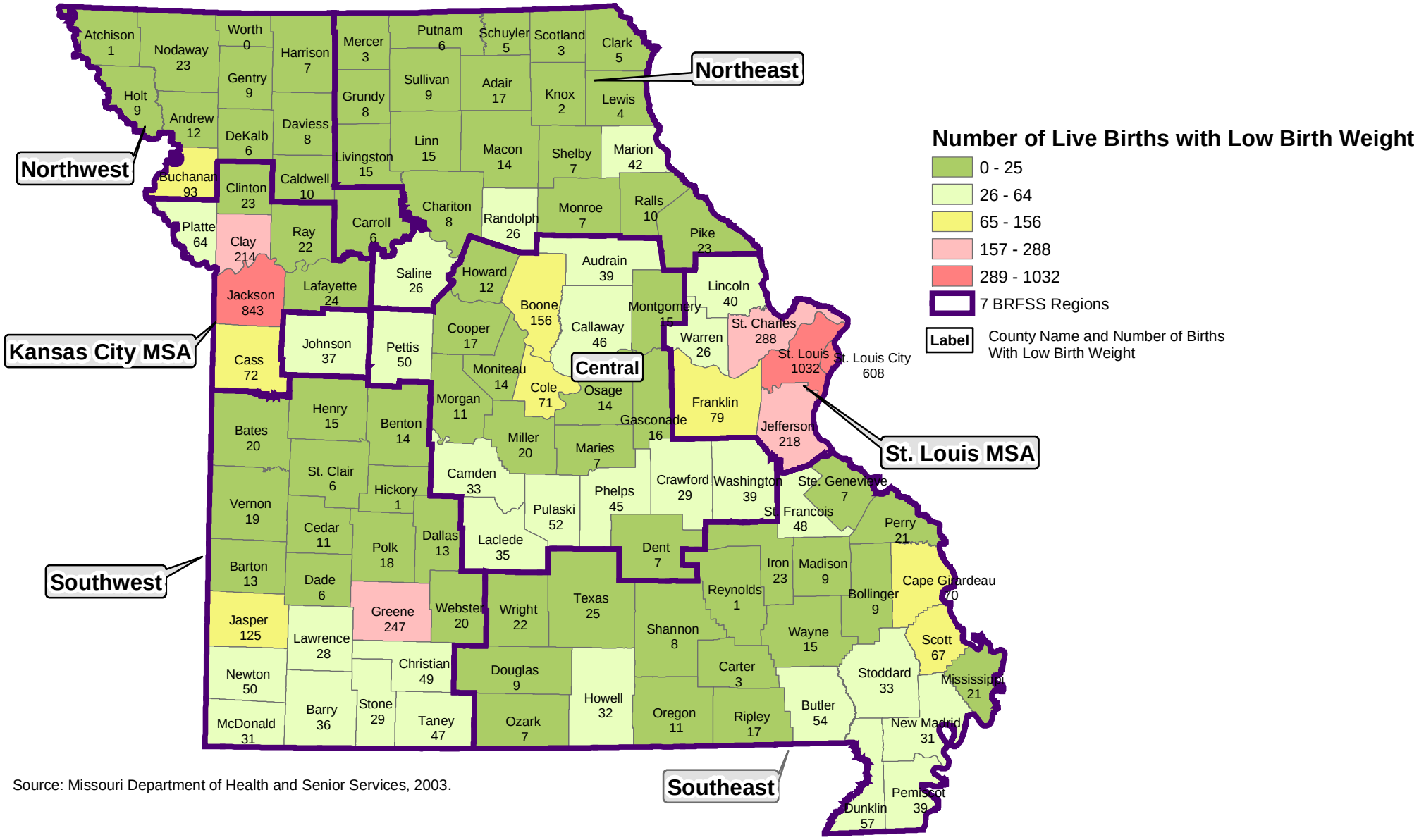
Source: Missouri Department of Health and Senior Services, 2003.

Births to Teen Age Mothers: Rate per 100 Live Births by Missouri Counties, 2003



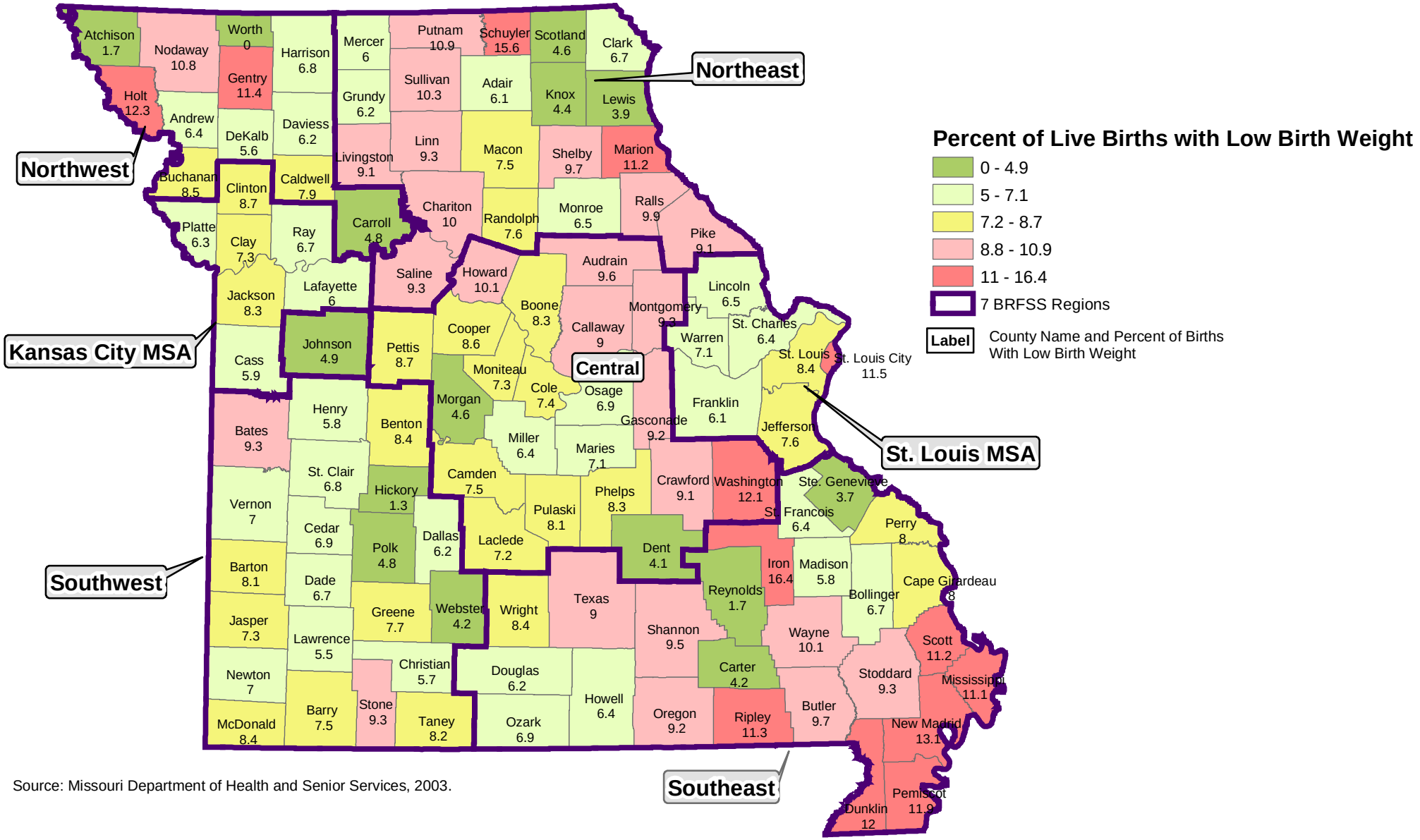
Source: Missouri Department of Health and Senior Services, 2003.

Number of Live Births With Low Birth Weight (Less Than 2500g) by Missouri Counties, 2003



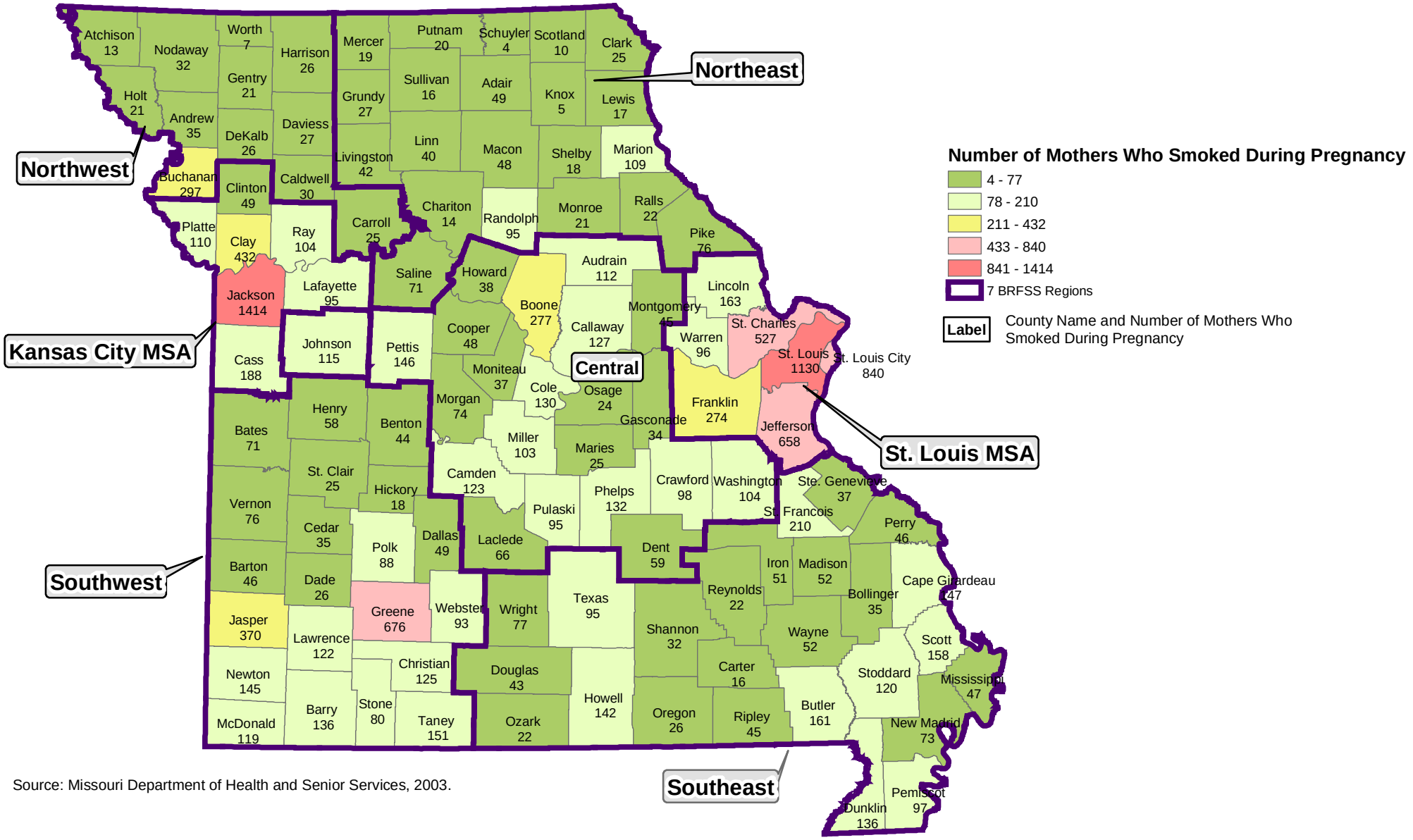
Source: Missouri Department of Health and Senior Services, 2003.

Live Births With Low Birth Weight (Less Than 2500g): Rate per 100 Live Births by Missouri Counties, 2003



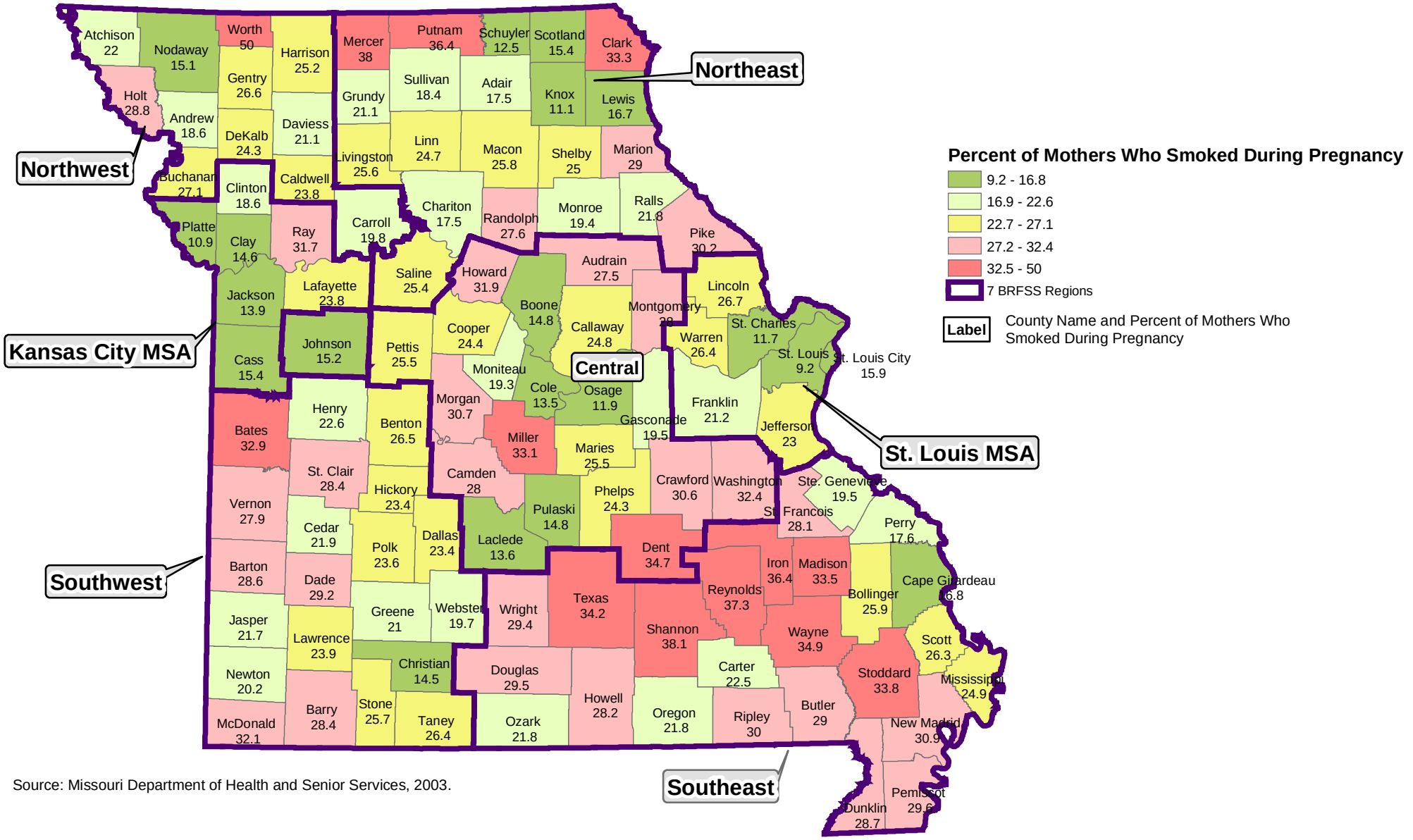
Source: Missouri Department of Health and Senior Services, 2003.

Number of Mothers Who Smoked During Pregnancy by Missouri Counties, 2003



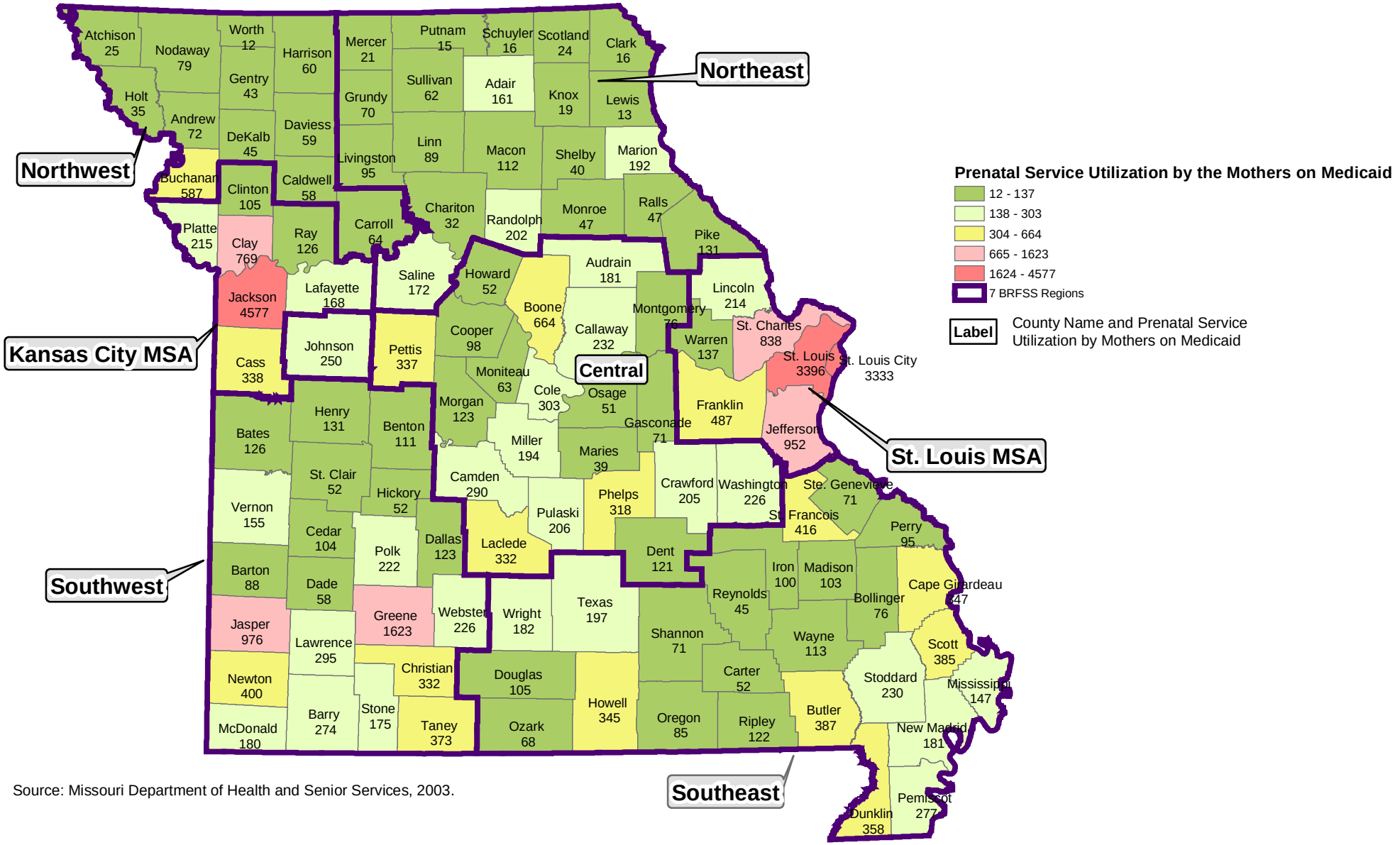
Source: Missouri Department of Health and Senior Services, 2003.

Mothers Who Smoked During Pregnancy: Rate per 100 Live Births by Missouri Counties, 2003



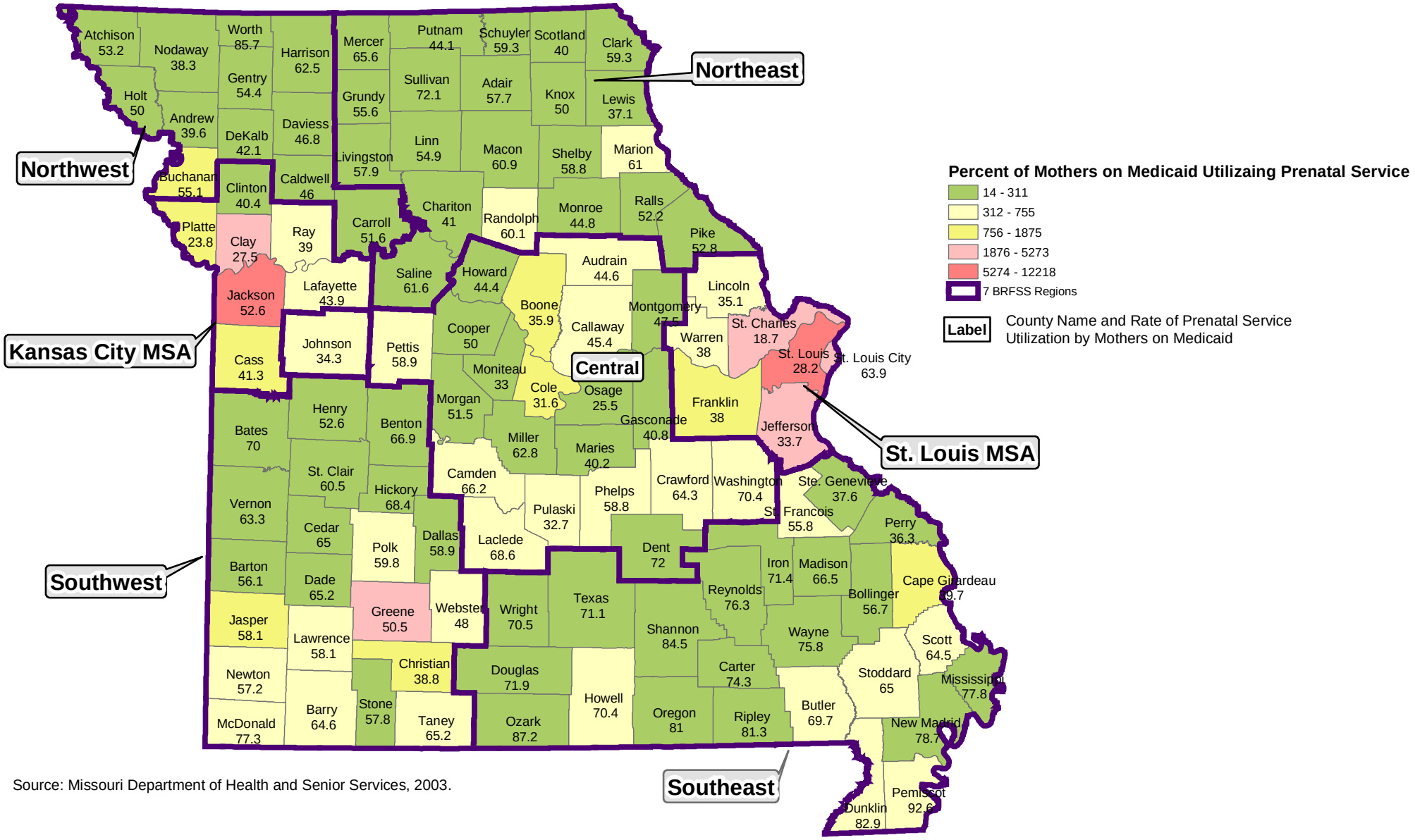
Source: Missouri Department of Health and Senior Services, 2003.

Prenatal Service Utilization by the Mothers on Medicaid by Missouri Counties, 2003



Source: Missouri Department of Health and Senior Services, 2003.

Prenatal Service Utilization by the Mothers on Medicaid: Rate per 100 Live Births by Missouri Counties, 2003



Source: Missouri Department of Health and Senior Services, 2003.

Appendix – 5(b)

Access to Health Care Services

(Ranking of Missouri Counties)

Note: All 115 counties of Missouri are ranked by most to least need of attention. Color-coding is based on quintile ranking.

Access to Health Care Services *(Counties By Composite and Individual Ranks)*						
	County Name	**ER Use by Uninsured**	**ER Use by Publicly Insured**	**Inadequate Prenatal Care**	**Preventable Hospitalization**	**Composite (Access)**
1	St. Louis	114	115	101	115	445
2	Jasper	111	111	91	108	421
3	Newton	106	105	97	100	408
4	Dunklin	92	96	114	105	407
5	Jackson	115	114	61	114	404
6	Butler	98	98	105	102	403
7	Taney	105	100	109	85	399
8	Pettis	99	92	106	94	391
9	St. Louis City	113	113	49	113	388
10	St. Francois	103	102	66	103	374
11	Greene	112	112	31	110	365
12	Camden	91	90	100	79	360
13	Lawrence	96	97	81	80	354
14	Callaway	89	80	87	93	349
15	Scott	88	101	65	95	349
16	Buchanan	104	107	30	107	348
17	Ripley	67	82	112	86	347
18	Boone	108	106	28	104	346
19	Jefferson	107	109	19	111	346
20	Clay	109	108	18	109	344
21	Barry	93	89	83	78	343
22	St. Charles	110	110	7	112	339
23	Audrain	75	87	110	63	335
24	Pemiscot	33	85	113	101	332
25	Phelps	90	93	59	90	332
26	Washington	87	79	79	82	327
27	Cole	97	99	32	98	326
28	Franklin	100	104	11	106	321
29	Stoddard	83	91	62	84	320
30	Randolph	101	76	55	87	319
31	Cape Girardeau	102	103	8	97	310
32	Cass	94	95	22	99	310
33	Howell	82	94	50	83	309
34	Stone	79	69	98	62	308
35	Webster	78	61	107	58	304
36	Laclede	84	88	54	72	298
37	Marion	73	77	70	76	296
38	Lincoln	86	70	47	92	295
39	Miller	76	73	82	60	291
40	Texas	71	84	63	66	284

Access to Health Care Services *(Counties By Composite and Individual Ranks)*						
	County Name	**ER Use by Uninsured**	**ER Use by Publicly Insured**	**Inadequate Prenatal Care**	**Preventable Hospitalization**	**Composite (Access)**
41	New Madrid	44	64	103	70	281
42	Christian	95	83	13	88	279
43	McDonald	60	46	95	77	278
44	Morgan	66	52	104	55	277
45	Platte	85	74	20	96	275
46	Pike	62	60	84	68	274
47	Vernon	80	81	38	74	273
48	Henry	65	75	57	75	272
49	Johnson	81	55	42	91	269
50	Saline	69	66	69	61	265
51	Crawford	68	67	48	71	254
52	Barton	55	72	68	57	252
53	Bates	63	63	45	81	252
54	Mississippi	43	56	96	53	248
55	Lafayette	56	68	34	89	247
56	Dent	72	78	40	49	239
57	Polk	74	86	10	65	235
58	Ray	77	50	33	73	233
59	Wayne	45	39	102	47	233
60	Pulaski	70	62	36	64	232
61	Reynolds	50	57	89	32	228
62	Macon	54	40	85	46	225
63	Wright	57	51	67	45	220
64	St. Clair	38	36	73	59	206
65	Adair	59	65	12	69	205
66	Montgomery	35	35	99	35	204
67	Dallas	52	45	80	26	203
68	Warren	64	49	23	67	203
69	Iron	46	47	58	50	201
70	Cooper	61	48	51	38	198
71	Ste. Genevieve	42	30	60	56	188
72	Linn	39	54	44	48	185
73	Grundy	36	41	75	31	183
74	Clinton	51	38	39	54	182
75	Moniteau	41	34	71	36	182
76	Perry	58	71	2	44	175
77	Livingston	53	59	9	51	172
78	Sullivan	24	23	108	16	171
79	Carroll	23	33	72	41	169
80	Daviess	21	17	111	20	169

Access to Health Care Services *(Counties By Composite and Individual Ranks)*						
	County Name	**ER Use by Uninsured**	**ER Use by Publicly Insured**	**Inadequate Prenatal Care**	**Preventable Hospitalization**	**Composite (Access)**
81	Benton	49	42	25	52	168
82	Cedar	47	53	24	43	167
83	Carter	30	27	88	19	164
84	Harrison	13	28	94	29	164
85	Gasconade	37	29	53	42	161
86	Madison	48	58	21	30	157
87	Scotland	2	12	115	22	151
88	Caldwell	26	26	74	21	147
89	Hickory	20	32	64	28	144
90	Douglas	25	25	77	11	138
91	Shannon	31	43	41	18	133
92	Bollinger	40	44	5	40	129
93	Ozark	9	9	86	25	129
94	Maries	17	10	90	10	127
95	Nodaway	34	37	16	39	126
96	Oregon	14	31	56	24	125
97	Monroe	32	19	52	14	117
98	Putnam	8	8	93	6	115
99	Knox	7	6	92	5	110
100	Clark	1	1	76	27	105
101	Osage	18	24	27	34	103
102	Gentry	15	15	35	37	102
103	Howard	22	20	46	12	100
104	Schuyler	4	7	78	7	96
105	Andrew	29	22	6	33	90
106	Shelby	10	11	43	15	79
107	Chariton	27	13	15	23	78
108	DeKalb	16	16	26	13	71
109	Lewis	6	4	37	17	64
110	Dade	28	21	1	8	58
111	Ralls	19	14	14	9	56
112	Holt	11	5	29	4	49
113	Atchison	12	18	3	3	36
114	Mercer	5	3	17	1	26
115	Worth	3	2	4	2	11

Source: Computation of these ranks is based on data from Missouri Department of Health and Senior Services
Note: 1- Missouri counties, with individual and composite ranking, by greater problems to access
2- Color-coding shows the quintile grouping

Appendix – 6(a)

Table:

Safety Net Ranking of Missouri Counties

By Demand, Environment, Access, System and Structure, and Overall)

Note: All 115 counties of Missouri are ranked by most to least need of attention. Color-coding is based on quintile ranking.

Safety Net Ranking

(Counties By Individual and Composite Ranking)

	County Name	Demand	Environment	Access	System and Structure	Safety Net Composite
1	New Madrid	108	109	75	104	396
2	Dunklin	112	114	112	53	391
3	Pemiscot	114	115	91	66	386
4	Mississippi	95	112	62	103	372
5	McDonald	74	105	73	111	363
6	Pike	96	108	70	88	362
7	Ripley	89	106	99	68	362
8	Jasper	104	94	114	45	357
9	Stoddard	111	92	87	61	351
10	Texas	103	98	76	72	349
11	Washington	113	110	90	36	349
12	Butler	107	111	110	18	346
13	Wayne	94	103	58	89	344
14	St. Francois	110	107	106	8	331
15	Shannon	101	87	25	115	328
16	Barry	97	85	95	49	326
17	Phelps	109	101	92	22	324
18	Carter	98	81	32	110	321
19	Oregon	86	100	20	108	314
20	Howell	106	99	83	25	313
21	Hickory	102	102	27	77	308
22	Reynolds	85	86	55	81	307
23	Dent	81	84	60	80	305
24	Buchanan	87	88	100	27	302
25	Stone	88	61	82	71	302
26	Morgan	100	73	72	54	299
27	Jackson	92	93	111	1	297
28	St. Louis	65	113	115	3	296
29	St. Louis City	115	64	107	9	295
30	Randolph	84	90	86	28	288
31	Dallas	67	80	48	86	281
32	Iron	91	96	47	46	280
33	Audrain	79	95	93	6	273
34	Lawrence	49	62	103	57	271
35	Webster	70	44	81	73	268
36	Crawford	77	75	65	48	265
37	Pettis	50	78	108	29	265
38	Marion	78	83	79	24	264
39	Wright	58	89	53	64	264
40	Taney	66	72	109	16	263
41	Boone	83	77	97	4	261

Safety Net Ranking
(By Individual and Composite Ranking)

	County Name	Demand	Environment	Access	System and Structure	Safety Net Composite
42	Benton	93	74	35	56	258
43	Scott	105	13	102	35	255
44	Miller	68	56	77	50	251
45	Madison	99	82	30	38	249
46	Callaway	56	46	101	42	245
47	Sullivan	25	104	38	78	245
48	Camden	82	40	104	14	240
49	Vernon	62	50	69	59	240
50	Greene	63	66	105	5	239
51	Laclede	73	63	80	23	239
52	Cape Girardeau	80	47	84	26	237
53	Putnam	69	35	18	114	236
54	Macon	54	49	54	75	232
55	Pulaski	51	60	56	60	227
56	Grundy	39	69	43	74	225
57	Cedar	47	91	34	52	224
58	Newton	55	45	113	11	224
59	Bollinger	43	39	23	112	217
60	Lincoln	52	36	78	51	217
61	Schuyler	90	12	12	100	214
62	Johnson	71	54	67	21	213
63	Bates	44	37	64	67	212
64	Polk	76	58	59	19	212
65	Adair	72	68	51	20	211
66	Douglas	31	70	26	84	211
67	Jefferson	75	21	98	17	211
68	Henry	32	71	68	39	210
69	Ozark	36	57	24	91	208
70	Saline	34	76	66	32	208
71	Clark	46	32	16	109	203
72	Montgomery	45	67	50	41	203
73	St. Clair	37	79	52	33	201
74	Barton	24	29	63	83	199
75	Cole	60	48	89	2	199
76	Moniteau	18	59	42	79	198
77	Maries	64	15	22	94	195
78	Lewis	26	53	7	107	193
79	Perry	57	24	40	69	190
80	DeKalb	6	65	8	105	184
81	Linn	48	51	44	40	183
82	Cooper	3	55	46	76	180

Safety Net Ranking
(By Individual and Composite Ranking)

	County Name	Demand	Environment	Access	System and Structure	Safety Net Composite
83	Livingston	42	43	39	55	179
84	Shelby	53	19	10	96	178
85	Carroll	38	41	36	62	177
86	Knox	40	17	17	102	176
87	Ste. Genevieve	21	97	45	13	176
88	Christian	59	3	74	34	170
89	Daviess	17	18	37	98	170
90	Ray	22	33	57	58	170
91	Clay	30	34	96	7	167
92	Howard	15	52	13	82	162
93	Monroe	11	42	19	90	162
94	Scotland	20	20	29	93	162
95	Gasconade	61	23	31	44	159
96	St. Charles	41	11	94	12	158
97	Harrison	7	28	33	87	155
98	Cass	23	10	85	31	149
99	Lafayette	19	31	61	37	148
100	Chariton	10	30	9	92	141
101	Worth	16	27	1	97	141
102	Nodaway	33	38	21	47	139
103	Warren	35	25	49	30	139
104	Holt	29	9	4	95	137
105	Platte	27	22	71	15	135
106	Franklin	28	7	88	10	133
107	Andrew	9	1	11	106	127
108	Mercer	2	8	2	113	125
109	Atchison	8	6	3	99	116
110	Dade	14	26	6	70	116
111	Clinton	13	16	41	43	113
112	Ralls	1	4	5	101	111
113	Osage	5	2	15	85	107
114	Gentry	12	14	14	63	103
115	Caldwell	4	5	28	65	102

Source: Computation of these ranks is based on HMO data from Department of Insurance, 2003, Department of Social Services, Department of Health and Senior Services, U.S. Census, 2000, Claritas, 2001, and HICAS, 2004

Note: 1- Health care safety net ranking (individual and composite) of Missouri counties
2- Color-coding shows the quintile grouping

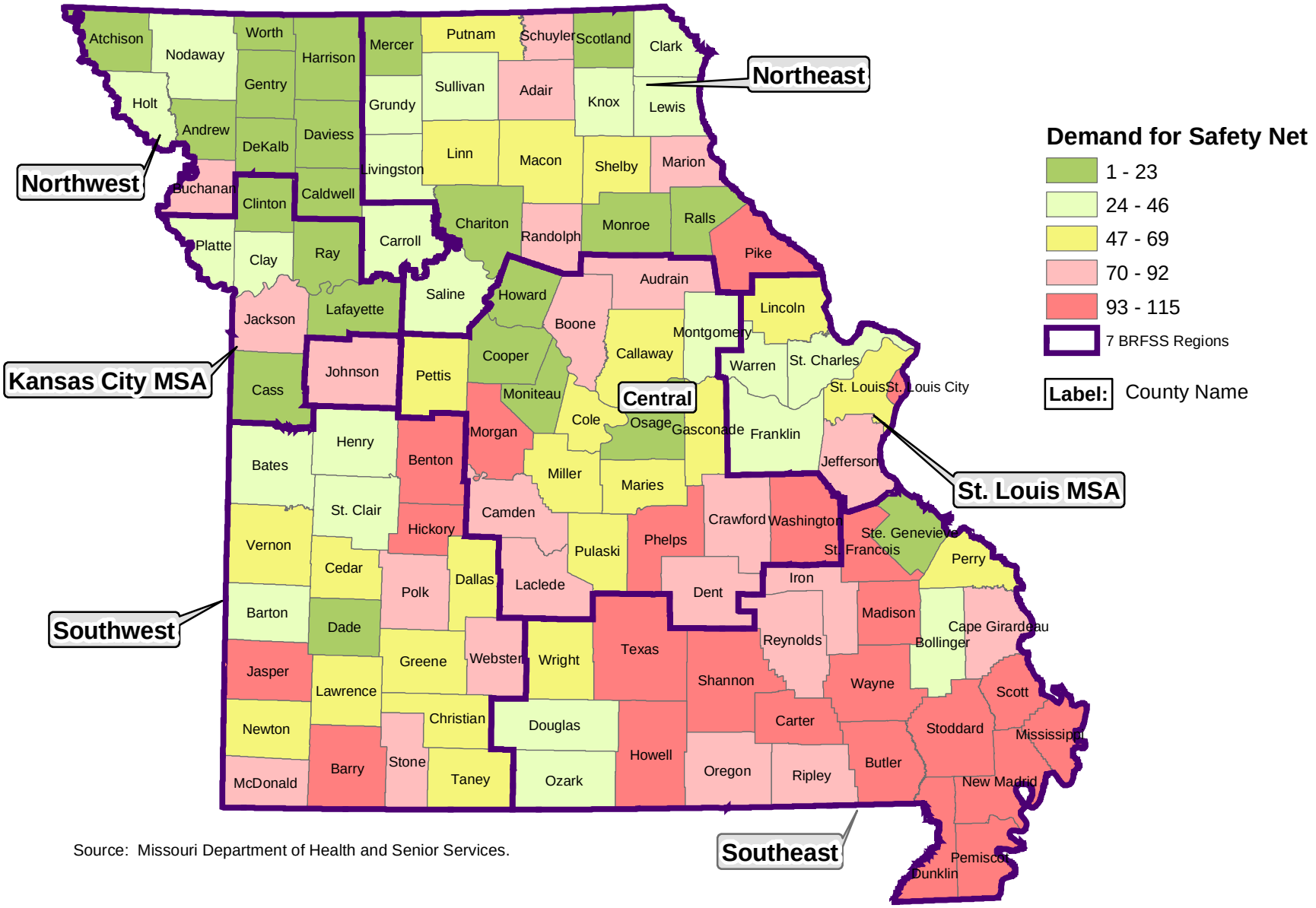
Appendix – 6(b)

GIS Maps

Safety Net Ranking of Missouri Counties

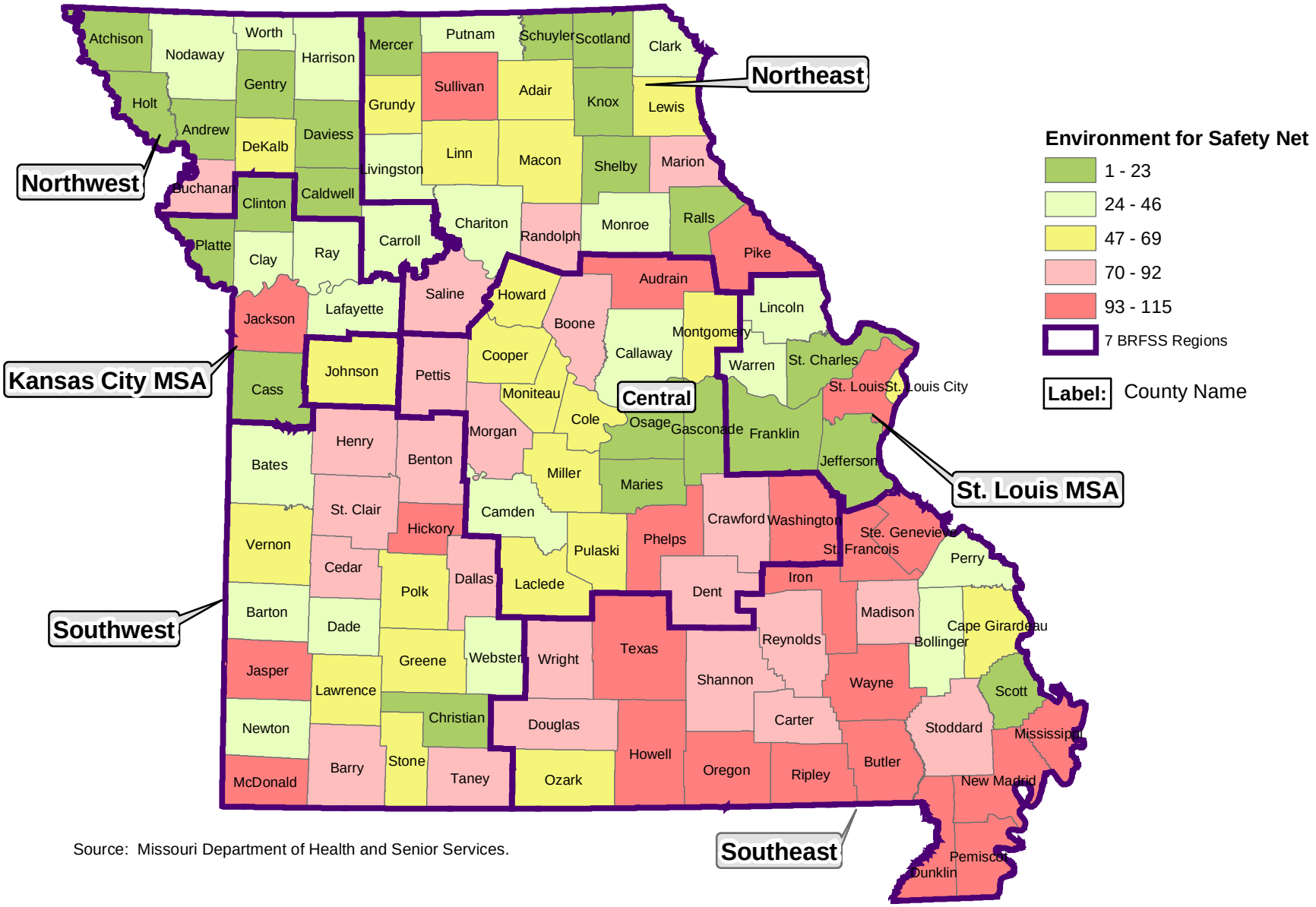
By Demand, Environment, Access, System and Structure, and Overall)

Demand for Health Care Safety Net
Ranking by Missouri Counties



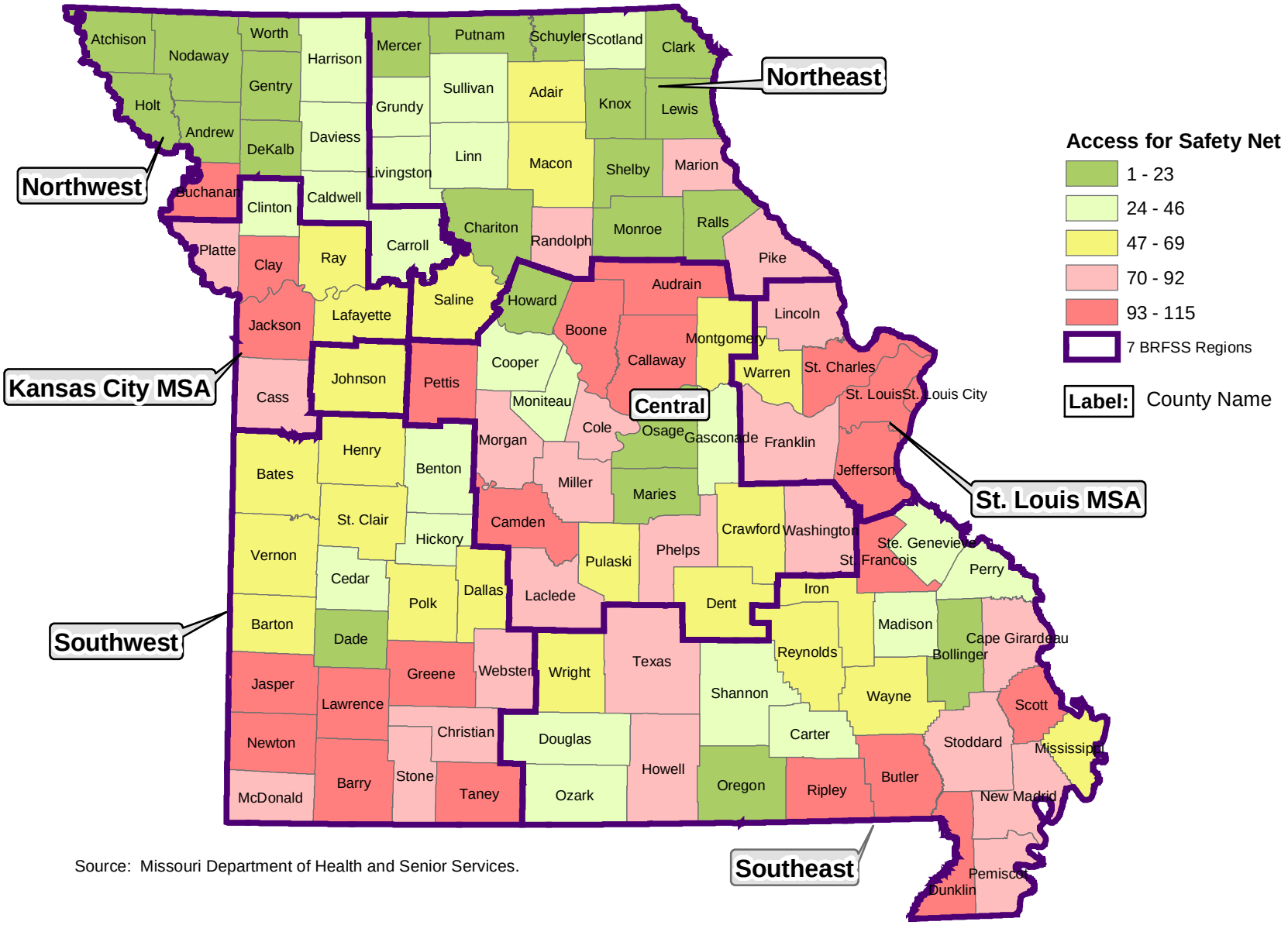
Source: Missouri Department of Health and Senior Services.

Environment for Health Care Safety Net Ranking by Missouri Counties



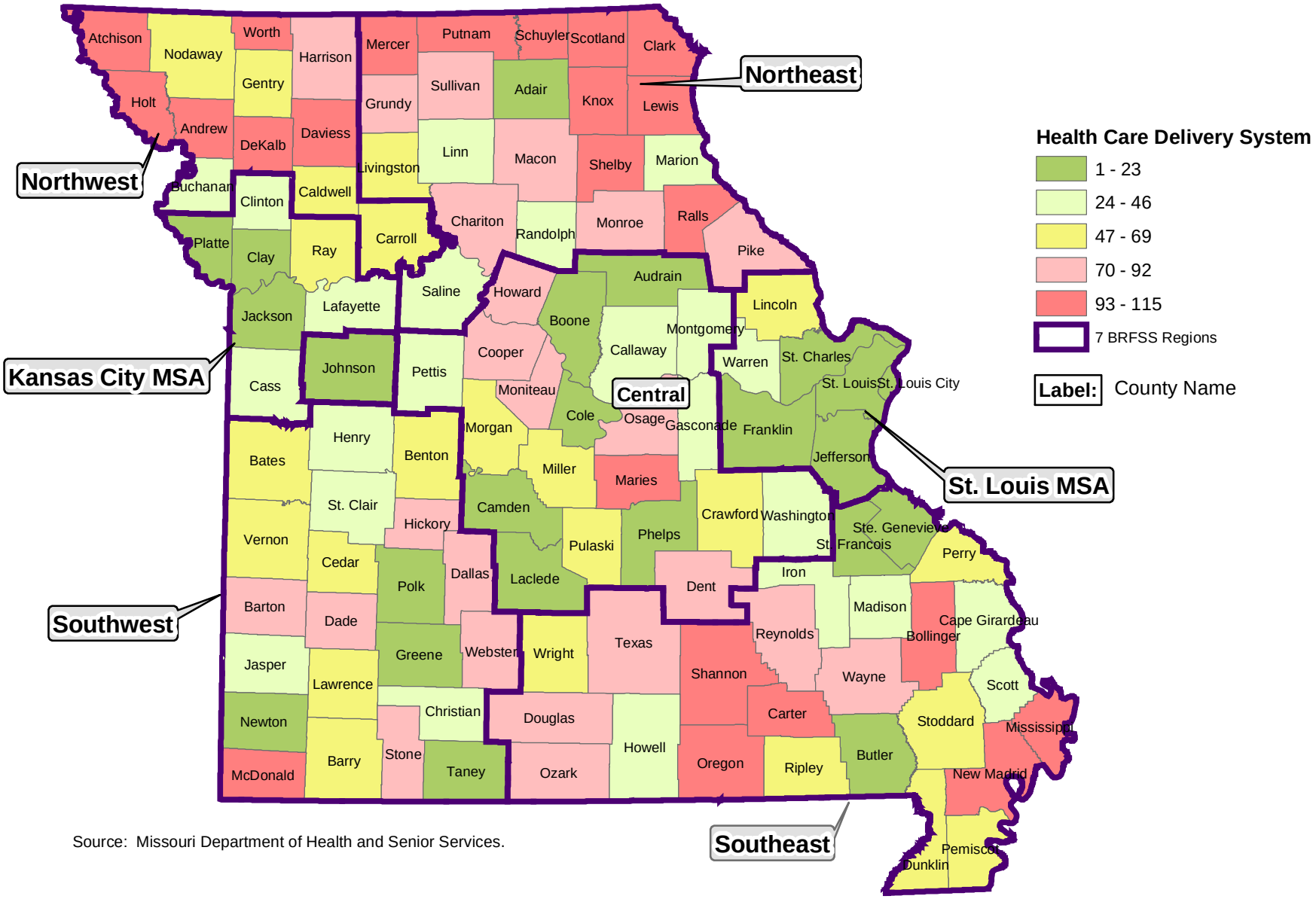
Source: Missouri Department of Health and Senior Services.

Access for Health Care Safety Net Ranking by Missouri Counties



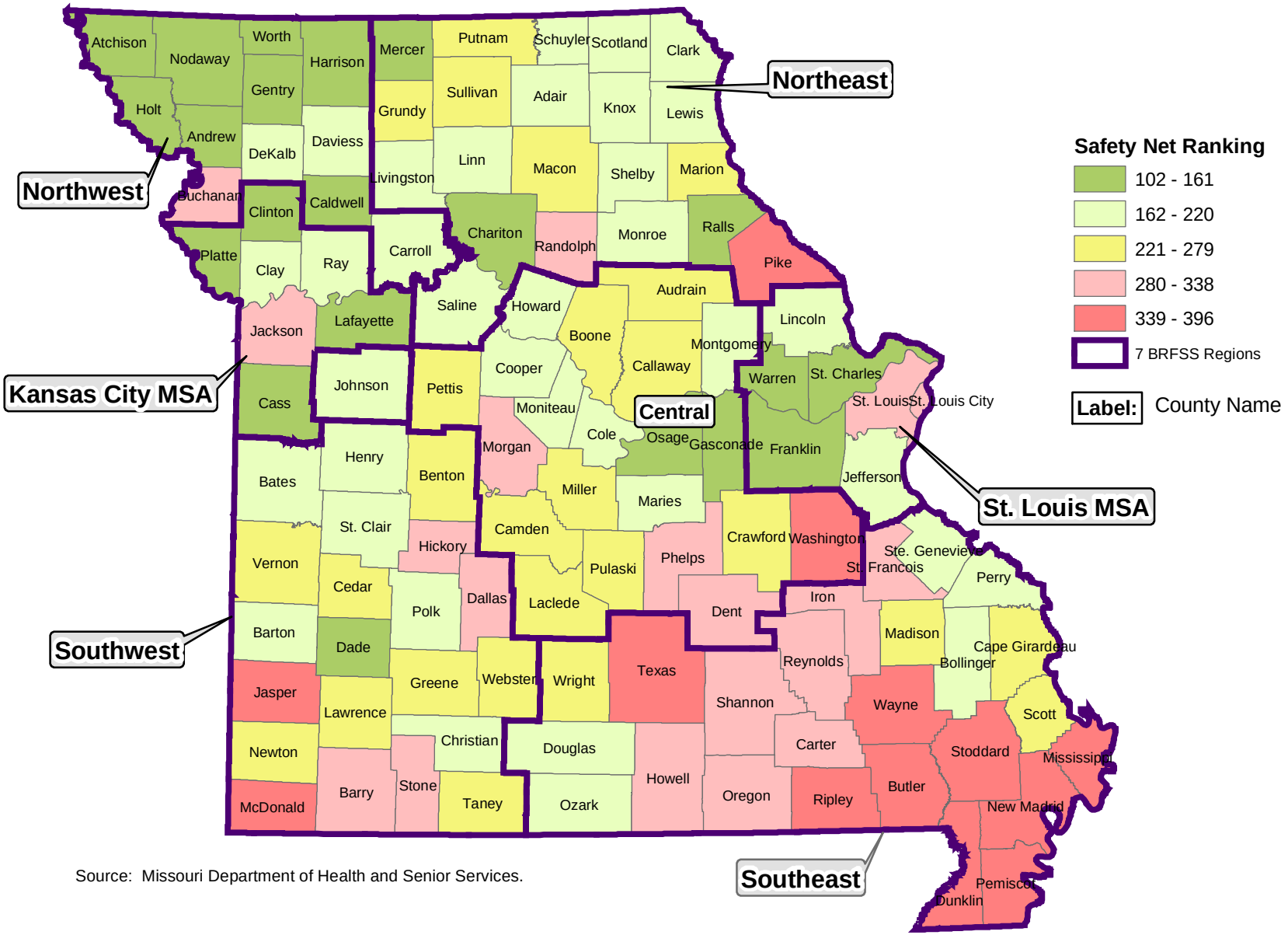
Source: Missouri Department of Health and Senior Services.

Health Care Delivery System and Structure
Ranking by Missouri Counties



Source: Missouri Department of Health and Senior Services.

Health Care Safety Net
Ranking by Missouri Counties



Source: Missouri Department of Health and Senior Services.